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**CONSTRUCTING AND VALIDATING THE LARGE INVENTORY OF
FREQUENT EXPERIENCE: PERSONALITY BASED ON EVERYDAY
BEHAVIORS**

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Constructing and Validating the Large Inventory of Frequent Experience :

Personality Based on Everyday Behaviors

by

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Dedication

This work is dedicated to my grandmothers: Elaine and Skip.

Grandma Elaine: Thank you for your unfaltering devotion and unfettered pride in my every travail.

Skip: Your unmistakable voice lifts me when I am low, reminding me to sing when I look in the mirror, do cartwheels when I'm too tired to walk, and forever know that everything will turn out marvelously.

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**Constructing and Validating the Large Inventory of Frequent Experience:
Personality Based on Everyday Behaviors**

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Supervisor: James Pennebaker

What is the best way to account for the variety of human experience? The range of ways to understand individuals has been debated across myriad domains of study without consensus. Rarely have the solutions involved the role of the observable behaviors of daily life; instead inferences are made from traits, opinions, beliefs, or needs. The current dissertation proposes assessing personality through the lens of time, focusing on individual differences in the objective, real world transactions of everyday behaviors.

To accomplish this goal an inventory was created to closely approximate the totality of everyday behavioral life and explore its relation to traditional measures of personality. Study 1 analyzed the structure of behaviors in the American Time Use data as an aid in item generation within a narrowed, but comprehensive scope of the behavioral landscape. A thorough set of criteria were then applied to tailor the inventory towards measuring objective, high incidence, quotidian behaviors of psychological

interest. In Study 2, the assembled 78-item behavioral inventory was administered to a large, diverse sample to explore the structure of everyday behaviors; the stability of behaviors over time; individual differences in everyday behaviors; the relationship of everyday behaviors to various measures of personality; and, the covariance of the behaviors with the language of everyday life.

Six major dimensions of everyday behaviors were identified and found to be internally consistent and reliable over time. The dimensions demonstrated unique variance as a function of age, sex, and personality. The self-report format of this method of assessing everyday behaviors was shown to be construct valid in that analyses of open-ended linguistic descriptions of routine weekend behaviors paralleled the patterns of activity reported. The broader implications of assessing personality by way of everyday behaviors are discussed in that behaviors can be thought of as an enduring signature that implicitly incorporate our values, attitudes, beliefs, and overall means of expression.

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INTRODUCTION

We take a handful of sand from the endless landscape of awareness around us and call that handful of sand the world. Once we have the handful of sand, the world of which we are conscious, a process of discrimination goes to work on it. We divide the sand into parts. This and that. Here and there. Black and white. Now and then. The handful of sand looks uniform at first, but the longer we look at it the more diverse we find it to be. Each grain of sand is different. No two are alike. Some are similar in one way, some are similar in another way, and we can form the sand into separate piles on the basis of this similarity and dissimilarity. Shades of color in different piles- sizes in different piles- grain shapes in different piles- grades of opacity in different piles- and so on, and on, and on.

Robert M. Pirsig
Zen and the Art of Motorcycle Maintenance

The particular lens through which one can see the most coherent picture of an individual has been debated throughout the history of personality psychology and market research. Disagreements continue, not only about the lens itself, but also about the domain and the level on which the lens is focused. A question across both fields remains: What type of data should be collected to understand people best (Emmons, 1995; McAdams, 1995; Little, Lecci, & Watkinson, 1992)? The answer is almost anything that can capture the variety of human experience: traits, motivational dynamics, narratives, preferences, attitudes, or opinions, to name a few. Through each lens, as illustrated in the quotation above, we create “piles” of people— coherent bundles of human experience, ideally, whose future behavior can be predicted more accurately. The current dissertation

looks through the lens of time to reflect individual differences in everyday behaviors. 'Piles' are thereby created on the basis of objective, real-world transactions.

The main goal of this project is the construction of an inventory to assess personality through everyday behaviors and to explore the interrelations among different conceptual units of individual differences: personality traits, behavior, and language. More specifically, the inventory assesses the frequency with which individuals participate in various everyday activities. In its focus on the individual in the context of daily life, the project readily adheres to the recent call in personality psychology to investigate real-world behavior (Mehl & Pennebaker, 2003; Paunonen, 2003; Fleeson, 2002; Gosling, Ko, Manarelli, & Morris, 2002; Craik, 2000; Csiksentmihalyi & Larsen, 1987; Buss & Craik, 1983).

Why Study Everyday Behaviors?

Most current personality psychology has relied on self-report evaluations as the gold standard. That is, personality psychology has evolved into self-assessment personality. So many different inventories exist that Goldberg (in press) has likened the variety and amount to the array of existing hand-soaps, differing in color, smell and feel. Several rich theoretical views argue that this is a limited perspective (Freud, 1924; Winter, 1973, McAdams, 1995; Mehl, Pennebaker, Crow, Dabbs & Price, 2001; Kagan, 2002). Are people really who they believe they are?

Asking for consciously held views of oneself is inherently problematic due to social desirability biases, subjective construal problems, and potential inaccessibility to this type of knowledge (Schwarz, 1993; Watson & Pennebaker, 1989; Nisbett & Wilson,

1977; Crowne & Marlowe, 1960). Often people are unaware of what is going on inside their minds and are ironically poor at predicting their own preferences and future behavior (Nisbett & Wilson, 1977). Some contend that attitude construction occurs on-the-spot by drawing on the most salient information at that point in time, including information provided by the question itself or alleged aim of research (e.g. Schwarz, 1993). Self-reported views of oneself—on traits and subjective states-- thereby assess self-theories; they demonstrate not how people really are, but instead how they think they are, or want others to think they are.

Recent approaches to personality have shifted the focus from self-reports of traits and subjective states to more objective sources of data including physiological measures (Schultheiss et al., 2005), language (Newman, Pennebaker, Berry, & Richards, 2003), ability-based measures (MSCEIT; Mayer, Salovey & Caruso, 2003), and nonverbal assessments (Paunonen & Ashton, 2001). Frequently, the data obtained through these more objective and implicit sources of data offer a different perspective from questionnaires assessing self-theories of personality. For example, content coding descriptions of pictures for power motives show little to no relation with explicit measures of power and dominance (Schultheiss, Wirth, Torges, Pang, Villacorta, & Welsh, 2005). Analyzing the daily linguistic communications of romantic couples offers insight into the longevity of the relationship that self-reports do not provide (Slatcher & Pennebaker, 2005). Like these more recent approaches, the main goal of this project is to achieve an understanding of an individual independent of self-views.

In many ways, the current project is reminiscent of behaviorism and the post World War II interest in everyday living: how people spend their time, and in particular,

leisure time (Wheeler & Reis, 1991; Robinson, 1977). The premise of the Behaviorism movement was that psychology should be a purely objective branch of natural science; not based on introspective reports of subjective experience (e.g., Watson, 1924).

Although psychology has reached consensus that exploring the “black box” between stimulus and response is a worthwhile endeavor, this project rests on the principle that traditional measures of personality are simply *overly* reliant on self-reports of subjective experience. While self-views do carry “causal force” (Funder, 2001), the aim of the current investigation is to gain the supplementary understanding of individuals afforded by objective reports of their behaviors and language use.

Despite its current concern with self-theories, the empirical field of personality was theoretically conceptualized by a behavioral component and efforts to predict real-world behaviors. Allport’s (1937) original definition of personality had a similarly more behaviorist flair— in his words, personality was a “system of habits,” a rejection of the more superficial measures of traits that existed (Winter & Barenbaum, 1999). Cronbach and Meehl (1955) insisted that “admissible psychological constructs must be *behavior-relevant*” (p.291). However, almost fifty years later, Funder (2001) illustrated the “thin” evidence of empirical relationships between personality and behavior with this pithy summary of the available information: “as far as what extraverts have been observed to *actually do*, beyond some indication that they speak loudly, little would be found” (p. 212, italics added). As recently as 2003, Wu and Clark acknowledge that behavioral manifestations of personality traits have still been largely ignored.

The majority of existing research that does strive to address Cronbach’s and Meehl’s (1955) plea includes behavior as criterion acts against which to assess the

predictive validity of various trait measures. When behaviors are incorporated into empirical studies of personality, they are generally classified within categories that emanate from specific personality traits (Buss & Craik, 1983) or are merely clustered as desirable versus undesirable criterion acts (Zautra et al., 1986; Goldberg, in press; Paunonen & Ashton, 2001). Rather than exploring the predictive validity of traits using behavioral criteria, this dissertation examines whether personality measures should merely demonstrate some relationship with behaviors, or be defined by them per se.

This project is first and foremost interested in what a person does on an inherently daily basis. Small life events, including aspects of recreation, work and transportation have been demonstrated to be stable, enduring patterns in a person's everyday life (Zautra, Guarnaccia & Dohrenwend, 1986; Robinson, 1977). It is almost cliché to point out that past behavior is the best predictor of future behavior (Triandis, 1977). Zautra et al. (1986) found that personality dispositions and background demographic variables in fact have lower, largely nonsignificant predictive ability over daily events as compared to past daily events themselves ($r = .60$). Yet the focus on everyday behaviors has somehow slipped through the radar of personality psychology.

At the aggregate level, in other domains, there has been a burgeoning interest in studying everyday behaviors. Everyday behaviors captured in time-use studies of economists, sociologists, and policy makers on the aggregate level are documented as a useful way to understand the character of national life (Robinson, Andreyenkov, & Patrushev, 1988). Given that time is a basic human resource and universal medium, this same logic should apply to the individual level.

One can visualize [these] 24-hours as available input to all members of a population, with the output in the form of choice of activities,

representing a combination of preferences and constraints within the population. This output, particularly for the less-constrained uses of time, comprises rather solid behavioral evidence of the preferences and values of individuals. (Robinson, 1977; p.6)

The importance of everyday conduct and its role in personality assessment has been underscored by Craik's (1991) lived day methodology. "The recognition that informs lived day analysis is that lives are lived day by day, one day at a time, from day to day, day after day, day in and day out. Lives as we experience them are inherently quotidian," (Craik, 1993). Craik has created comprehensive, objective video recordings of the entire day of individuals in order to capture the traditionally overlooked, "humdrum details" of a person's daily activity. Ideally, personality assessment could capture this rich, comprehensive understanding of a person without the labor and time-intensive nature of this methodology. With a simple, reliable and valid inventory to assess the totality of everyday behaviors, such a goal begins to materialize.

Framework for the Proposed Construct

A natural question is how the study of everyday behaviors fits into existing research. The everyday behaviors under scrutiny here are not to be confused with subordinate, molecular acts, such as Murray's (1936) "actones"¹ or the other extreme which includes more straightforward reflections of personality traits such as the "interpreted acts" in Buss and Craik's Act Frequency Approach (1980, 1983). The level is most closely related to mid-level personal constructs such as personal projects, personal strivings, life tasks and current concerns (Little, 1983; Emmons, 1986; Cantor, 1990).

¹ Murray defines an actone as a bodily movement abstracted from its effect.

Constructs at the mid-level are alike in that they take into account more personalized, everyday information. Ours is unlike a mid-level construct in that it is unsuited for “zoom lenses, affective filters, sound tracks, and split screen commentary” (Little, 1996; p.343). The focus of the current project is the routine, humdrum of everyday life. The behaviors are specifically not “affectively charged” like self-defining memories (e.g., Singer & Salovey, 1993). Instead, by definition as quotidian, their repeated experience makes them highly characteristic of an individual’s habitual life. These behaviors are precisely that aspect of life that Kenneth Craik (1991) and his colleagues found themselves tempted to “fastforward” through in reviewing the footage of those research participants recorded on video for an entire day.

On the surface, this level of behavioral analysis is closely related to the study of “little experiences” in life stress and adaptation research (e.g. Holmes & Rahe, 1967). From the perspective of enhancing well-being and preventing depression, little experiences are events that serve as ‘last straws’ in the context of major upheavals; or, the opposite: the unexpected benefits of small events that ameliorate distress. In the Life Stress domain, the focus is the association of desirable and undesirable events with positive and negative affect, quality of life and psychiatric symptoms, not the understanding of personality based on habitual interactions with the environment. My goal in this dissertation is to use these same types of behaviors, regardless of their valence, as a mechanism to understand individuals.

In many ways, the portrait painted by these everyday behaviors as opposed to that conventionally portrayed by traits is reminiscent of the psychographic segmentation approach that emerged in reaction to the earlier demographic-based methods in consumer

behavior. Demographic segmentation created dry, un-lifelike descriptions of consumers based on their age, gender, income, and occasionally, education level. Psychographic profiles were introduced as “more comprehensive and more exciting descriptions” that would better address subgroups of the population to market relevant products (Wells, 1975).

Psychographic profiles were “lifestyle measures” that took into account motivations, aspirations, activities, interests, and opinions (Plummer, 1974; Burns & Harrison, 1979; Wells & Tigert, 1971). They were introduced to “embody the patterns that develop and emerge from the dynamics of living in a society” (Lazer, 1963; p.141). Thus, people’s lives were measured in terms of how they spend their time; their interests; what they deem important; their opinions of themselves and the world around them; and lastly, basic characteristics of their life stage, income, education, and location (Plummer, 1974). The idea was that the more you know and understand consumers, the more effectively you could communicate and market to them.

Personality assessment via trait measurement has been criticized in the same way as demographic segmentation, as depicting “the psychology of the stranger” (McAdams, 1995). McAdams (1990) has suggested that a more in-depth explanation of one’s origins, the characters in his/her life, settings, scripts, and experiences offers a better framework to conceptualize the “whole person” (1990, p.192). Craik (1993) similarly proposed that the task of personality psychologists should not merely be to study the accentuated features of a person’s life, but instead the entire life. In this dissertation, I argue that capturing the everyday behaviors that characterize an individual’s life reveals a qualitatively different type of portrait of an individual than the traditional approach;

richer, like McAdams (1990, 1995) has advocated, and more comprehensive, to satisfy Craik's (1993) plea.

Overview of the Project

The overarching question guiding the current research was whether we can understand individuals based on their everyday behaviors. Looking at people's everyday behaviors in order to gain an understanding of who they are is relatively unexplored; several major theoretical approaches, nevertheless, have dealt with related issues. This dissertation begins with a review of the relevant literature from personality, consumer, and environmental psychologies, including experience and time-sampling methodologies used across numerous fields. The synthesis of this literature culminates in the empirical examination of everyday behaviors as markers of personality.

Study 1 introduces a novel approach to generate items from the totality of everyday life by exploring the structure of behaviors in the American Time Use data. In the appendix, I have included an additional study assessing lay perceptions of how revealing everyday behaviors are in order to further narrow the scope of the behavioral landscape to a manageable level worthy of investigation. In Study 2, a behavioral inventory is created and administered to a large, diverse sample, to explore the structure of everyday behaviors; the stability of behaviors over time; individual differences in everyday behaviors (sex, age, students and adults); the relationship of everyday behaviors to various measures of personality; and, as a novel approach to construct validity, the covariance of the behaviors with linguistic descriptions of everyday life. With language as a measure of construct validity, we can make a fruitful comparison to the trait

approach, as derived from the lexical hypothesis.² That is, what are the behaviors that naturally emerge in the lexicon? By exploring the structure of everyday behaviors and their relationships with both traditional personality traits and language, we can begin to understand individuals in a natural, comprehensive and useful fashion.

² The lexical hypothesis is built on the fact that the words we use to describe people reflect individual differences in “real human behavior”— that the number of words is directly proportionate to the importance of the behavior. “Those individual differences that are most significant in the daily transactions of persons with each other become encoded into their language. The more important such a difference is, the more people will notice it and wish to talk of it , with the result that eventually they will invent a word for it” (Goldberg, 1982; p.204).

CONTEMPORARY PERSONALITY RESEARCH

The Origin of a Mainstream Perspective

One of the main goals of the current project is to gain an understanding of people and provide a language to explain that understanding in the fashion that naturally arises in everyday interactions. Historically, the study of personality in a non-clinical arena originated with a similar idea-- being able to describe people in the natural language that emerges in daily life. The lexical hypothesis, adhered to by Allport (1937), Norman (1967), Goldberg (1981), and Cattell (1945) is based on the idea that relevant personality characteristics have become encoded in the natural language, as people commonly use this vernacular to describe themselves and others. Thus, in creating a taxonomy of personality traits, Allport and Odbert (1936) compiled all terms from an unabridged English dictionary that could be used to “distinguish the behavior of one human being from that of another” (p.24).

The result of Allport and Odbert’s (1936) work was 18,000 terms subsequently divided into traits, states, judgments (evaluations of conduct and reputation), and physical characteristics. Norman’s (1967) elaborated classification made further distinctions: stable traits, temporary states, activities, social roles, social effects, evaluations, and ambiguous terms (not useful for personality description). While there has been much debate about the mutual exclusivity vs. “fuzzy boundaries” of the categories within the lexicon, most of the research in personality psychology is centered on just one category: traits (John & Srivastava, 1999; Buss & Cantor, 1989).

In the interest of manageability, Cattell’s (1946) subsequent analyses of Allport and Odbert’s terms were conducted on a subset of only the 4,500 trait terms. Eventually,

Cattell, pioneered the way in multivariate statistics to create a computer program that generated typological clusters and mathematically determined the number and content of clusters in a dataset (Cattell & Coulter, 1966). As a result, research emanating from this tradition has primarily focused on taxonomies of traits: their number, nature and organization (De Raad, 2000; John & Srivastava, 1999; John, 1989; Winter & Baumgarten, 1999).

Cattell's (1943, 1945) clustering of selected trait terms highly influenced the eventual emergence of the "Big Five" (Goldberg, 1981). Using a selection of Cattell's shortened lists of trait terms, similar five factor structures emerged across different types of ratings (self, peers, psychological staff) and different samples (Tupes & Christal, 1961; for a thorough review, see John & Srivastava, 1999). Using alternative lists of adjectives and abbreviated sets of more common terms, many researchers have consistently replicated the Big Five (e.g. Goldberg, 1990), across cultures, and languages (John, Goldberg, & Angleitner, 1984).

Alternative Views on Personality

While consensus is high, many believe there is more variance in human behavior not accounted for by the Big Five factors (e.g. McAdams, 1995; Paunonen & Jackson, 2000). Paunonen and Jackson (2000), for example, argue that traits such as Religiosity, Honesty, Deceptiveness, Conservativeness, Conceit, Thrift, Humorousness, Sensuality, and Masculinity-Femininity are important dimensions of traits that, albeit poorly represented by number of synonyms in the English language, are vastly meaningful at a conceptual level. Furthermore, Paunonen (2003) is critical of the lack of the Big Five's

predictive validity when it comes to complex behaviors that do not simply parallel an assessed construct.

Buss and Craik (1985) have similarly reiterated that the strict exclusion criteria that have been applied to lists of dispositional concepts throughout the history of personality have resulted in the removal of important dispositions. In their view, this is taken to mean classes of acts underlying dispositions. Their Act Frequency Approach (AFA, Buss & Craik, 1980) is founded on the definition of dispositions as summaries of the frequencies of (consensually agreed upon) acts performed in the past. With an emphasis on “common dispositions” such as dominance (Buss & Craik, 1980) and calculating (Buss & Craik, 1986), their approach is a natural precursor for the proposed study; however, there are substantial distinctions.

The AFA was originally created to examine the internal structure of dispositional constructs as a vehicle for analyzing everyday conduct. Yet one criticism of the AFA has been that it falls short of direct behavioral observation of “what people do all day” (Block, 1989). The act nomination procedure requires a panel to generate lists of manifestations of a given disposition (“Think of the three most calculating people you know... write down 5 acts they have performed that exemplify their calculatingness). The subsequent evaluation requires participants’ retrospective recall of how well a series of “interpreted acts” is applicable to them over a designated time period. While this approach is noteworthy for its focus on behaviors outside of the laboratory, it remains a trait-driven analysis of behavior; moreover, of one’s typical, not ongoing behavioral style (Wu & Clarke, 2003).

Shared Space: Personality and Behaviors

Few empirical studies investigate the behavioral components of personality. Even fewer involve behaviors of everyday life. Prior to one such study, Wu and Clark (2003) reported alarming statistics from a keyword search on the PsycINFO engine for overlap between personality and behavior. From 1960 to 1999, only .18% of research on personality (37 out of 20,942 studies) had documented any behavioral correlates as keywords. Traditionally, behavioral research has been limited to observing and coding participants' behavior in the laboratory, in response to a controlled event or while engaged in a semi-structured interaction (Funder, Furr, & Colvin, 2000; Gosling, John, Craik, & Robins, 1998; Borkenau & Muller, 1992).

Another limitation to the small amount of research that exists on behavioral correlates of personality is that the traits examined in relation to behaviors are for the most part “data-driven.” That is, traits are conceptually related to the behaviors of interest (Wu & Clark, 2003), or are selected to match the expected contents of laboratory tasks (Borkenau & Muller, 1992). For instance, in Borkenau and Mueller's (1992) study, judges were asked to watch videotaped interactions of research participants' disputes over controversial attitudes. The judges were then asked to make inferences of how good an example various behaviors of the disputants were of traits such as determined and critical—specifically selected based on prior coding of the discussions.

In their investigation of the relations between personality and daily behavior, Wu and Clarke (2003) successfully shifted the focus from behaviors confined to the laboratory and overcame retrospective reports of typical behaviors. With an impressively rigorous methodology, they captured ongoing behaviors performed on a regular basis;

albeit behaviors conceptually related to their traits of interest, what Paunonen (2003) would criticize as ‘parallel indicators’. Their 55-item Behavior Record included a range of items representative of impulsivity, aggression, and exhibitionism that were likely to occur regularly in their student sample. Not surprisingly, they successfully demonstrated that particular behaviors meant to reflect aggression—such as “hitting people and things,” “getting into arguments,” and “losing one’s temper” or “blowing up,”—performed over a 2 week period, have robust personality correlates with aggression.

An alternative method of examining the behavioral correlates of personality is to probe residues of everyday life where we naturally leave a behavioral ‘fingerprint’. A considerable amount of research is accumulating concerning the ways in which personality is perceived and expressed through outlets such as personal web pages (Vazire & Gosling, 2004), clothing (Robins, Gosling, & Donahue, 1997), music preferences (Rentfrow & Gosling, 2003), food preferences (Goldberg & Stycker, 2002) and living spaces such as bedrooms and offices (Gosling, Ko, Manerelli, & Morris, 2002). Briefly, *physical* environments readily fall into the interactionist framework wherein individuals select and create *social* environments that reinforce their dispositions, preferences, attitudes, and self-views (Buss, 1987; Swann, 1987; Tajfel & Turner, 1986; Gosling, Ko, Manerelli, & Morris, 2002). People high on Conscientiousness have the organizational shelving structures to line up their books in neat and tidy rows, they eat healthy foods, listen to music described as “Conventional,” and have clean, streamlined personal web pages. Observers pick up on these clues like fingerprints at a crime scene and can accurately detect how, for example, Conscientious an inhabitant is.

The current dissertation can be viewed as an extension of the research on behavioral manifestations of personality research in that it explores a non-traditional channel of personality assessment; however, it shifts the focus from static behavioral residues (and reports of the associated dispositions) to the causal behaviors per se. Whereas a bedroom is a valid “receptacle of behavioral residue” (e.g. organizing one’s room) (Gosling et al., 2002), some basic human behaviors such as taking a bath, playing computer games, or eating fast food may not leave so apparent a receipt, but can be reported on with minimal comprehension or recall bias (Schwarz & Oyserman, 2001) and reveal a wealth of information.

STUDYING INDIVIDUALS IN THE CONTEXT OF DAILY LIFE

Life Stress and Adaptation

An additional body of research that involves the measurement of everyday behaviors as proposed in this dissertation has come out of the literature on prevention of depression and enhancement of well-being (positive affect and perceived quality of life).

Specifically, Zautra, Guarnaccia, and Dohrenwend's (1986) work on the utility of the Inventory of Small Life Events (ISLE). Originally, the ISLE was created to differentiate between the desirable and undesirable behaviors of daily life that act as potentially preventable, less catastrophic (in comparison to the extreme situations typically studied) contributors to stress. The ISLE includes 186 small life events across 13 major areas of life concern (e.g. Love and marriage; Social Life; Work, etc.). Respondents are asked to indicate how many times in the last month each event had occurred. Events included on the inventory fulfilled the criteria of being distinguished from ongoing activities of daily life with observable, discrete beginnings, and were consensually, unambiguously classified as desirable or undesirable. Furthermore, the events were empirically established to require a reliably low readjustment score (using Holmes & Rahe, 1967 standard) and encompass a range of controllability, desirability, and causation (disposition, situation, or interaction).

The process used to generate items on the ISLE is extremely applicable to this dissertation research; where this project differs, is in the ultimate goal. Zautra et al. (1986, 1991) attempted to demonstrate the association of desirable and undesirable events with positive and negative affect, quality of life and psychiatric symptoms. Thus, items included were geared towards events that served as "last straws" in the context of major

upheavals; for example, “heard rumors of layoffs that would affect me” and “friend/acquaintance failed to show up for scheduled meeting.” Additionally, desirable events were included to test the benefit of small incidents that might ameliorate distress; for example, “invited out by friends/ acquaintance unexpectedly,” and “found a new convenient parking place.” My aim in this dissertation was to generate items regarding more frequent events that could occur everyday, regardless of their valence. Furthermore, my ultimate goal was to use these behaviors as a mechanism to understand an individual.

Behavioral Mapping

One of the building blocks of environmental psychology-- the study of individuals’ relationships to their immediate physical surroundings, was the detailed empirical cataloguing of behaviors within a specific physical space. Ittleson, Rivlin and Proshansky (1970) introduced the use of ‘behavioral maps’ to augment an architect’s floor plan that more broadly grouped behaviors (e.g. bathroom, kitchen, living room). Behavioral maps involved the analysis of behaviors into relevant categories and the subsequent empirical observation of these categories (Ittleson et al. 1970). The original study was conducted on two psychiatric wards in an effort to increase the effectiveness through appropriate design. Ittleson et al.’s decisions as to the kind of behaviors relevant to the problem being studied are extremely relevant to this dissertation.

Ittleson et al.’s main interests were “behaviors that most nearly describe the daily round of activities of the patients... commonsense descriptive categories of gross, overt behaviors that together make up the daily routine...” (p.660). The classification process involved trained judges sorting lists of behaviors that were homogenous within

themselves (eating behaviors) and distinct from others (personal hygiene). Ittleson emphasized that the classification procedure is crucial to interpreting the data, as different combinations of behaviors could lead to different results. Principle components factor analysis, which was not available to Ittleson was fortunately relied on to explore the dimensional structure of the inventory of behaviors collected in this dissertation.

Experience Sampling

Although behavioral mapping is rarely discussed in contemporary psychological literature, one methodology which similarly stresses descriptive documentation of the context and content of individuals in their daily lives is experience sampling (ESM; Csikszentmihalyi & Larsen, 1987; for a detailed review see Hormuth, 1986). Primarily concerned with overcoming the inaccuracies of retrospective self-reports, beeper-prompted checklists were developed to research time allocation and the associated psychological reactions to everyday experiences (Csikszentmihalyi & Larson, 1987).

The goal of ESM methodology is to gain comprehensive coverage of respondents' internal and external situations. When prompted, respondents fill out forms regarding their location, social context, primary and secondary activity, content of thought, and various measures of affect or other psychological variables (motivation, concentration, activation, etc.) (Csikszentmihalyi & Larson, 1987). Activities are later coded into "functional categories" such as work vs. leisure (Prescott, Csikszentmihalyi, & Graef, 1981). Important structural differences, such as distinctions in the way individuals describe the same activity are thereby overlooked (Csikszentmihalyi & Larson, 1987). This is a function of the primary goal of the ESM, which is to investigate the interaction

of how patterns in subjective experiences are associated with the larger context of everyday life (Kubey, Larson, & Csikszentmihalyi, 1996).

Like other methodologies discussed above, the collection of objective data with ecological validity is germane to the current project; however, this dissertation is not concerned with the common experience of situations or differences in subjective experiences. The goal is to explore individual differences in the transactions between people and environments as manifested in everyday behaviors. Individual differences in patterns of everyday behaviors are considered akin to personality.

An extension of the ESM methodology, and natural precursor to this dissertation in its emphasis on naturalistic behaviors outside of the laboratory, is the work of Mehl (2004; Mehl & Pennebaker, 2003). Mehl (2004) conducted an ethnography of students' daily lives using advanced technology that recorded snippets of participants' natural conversations and surrounding social environments. From his novel approach, he designated robust markers of naturally existing individual differences in language use as well as a map of time spent in different social contexts. Mehl and Pennebaker (2003) coded the social environments of research participants wearing Electronically Activated Recorders (EARs) by the location, activities, and interactions of participants within 19 social contexts (e.g. working, eating, in apartment). According to their research, participants demonstrated a high degree of stability over time in their daily social environments, not only where participants spent their time, but also what they spent their time doing, and with whom they spent their time. Base rates from Mehl's (2004) "quantitative ethnography" mapping students' social lives were also consistent with

experience sampling (Csikszentmihalyi & Larsen, 1984) and national time-use (Robinson, 1985) studies.

In sum, the context of individuals' daily lives or, the geography of their behavioral domains, has been mapped in varied ways, each providing unquestionably rich data. Primarily, the unifying foci of the approaches reviewed here have been to understand *how* the individual experiences the settings and activities of his or her life (Kahneman, Krueger, Schkade, Schwarz & Stone, 2004). What lies beyond the *how*? To my knowledge, no one has addressed the interindividual differences in these behavioral maps as insight about the nature of the individual, as opposed to the nature of time. Furthermore, although unmistakably thorough, answers to questions about the subjective experience of time use have been sought in ways that are labor expensive, time intensive, and frequently somewhat taxing to participants—having to be monitored, or monitoring themselves for lengthy periods of time. Is there a more efficient way to explore this topography? In this dissertation research, I attempt to replicate the quantitative information these studies have yielded about time use, gathered in a more efficient way, and applied towards the understanding of the time user.

Time-Budget Studies

Additional quantitative information about the allocation of time in daily life that is not associated with subjective experiences exists, although it is primarily on the aggregate level. These projects are conducted by sociologists, economists or policy researchers interested in the effectiveness of time use, or the influence of large scale societal changes (e.g. industrialization) on, for example, the division of household labor,

transportation, and leisure (e.g. Juster & Stafford, 1991; Robinson, 1977). Analyses of time-use at the aggregate level emphasize the value of time as an equally distributed variable that is invested in various activities as a function of constraints (work, family demands) and preference (free time) (Robinson & Godbey, 1999).

Time-use researchers typically make a distinction between 4 different types of time: contracted time which consists of paid work; committed time which consists of household and family care; personal time: sleeping, eating and grooming; and free time: “activities that involve maximum choice on the part of the individual” (Robinson & Godbey, 1997, p. 13). Contracted time and committed time are both designated as “productive,” while personal time is considered “maintenance,” and free time is regarded as “expressive.” Thus, time allocation can be viewed as an indicator of social welfare (Robinson, 1977). Furthermore the direct effects of biological (age, sex), status (education, income), role (marital status, parenthood), temporal (day of week, season), and environmental (region) factors can be measured objectively (Robinson & Godbey, 1997).

One oft-cited, sizable effort in studying time allocation was originated by Hungarian sociologist, Alexander Szalai in 1965-1966. In his 1972 book, *The Use of Time*, he presented data from the Multinational Time-Budget Research project which compared time allocation data across 12 capitalist and communist countries including the US and USSR. The study included detailed quantitative analyses of the frequency with which respondents engaged in various activities, as well as secondary investigations of the meaning of these activities in the context of daily life. Szalai (1972) collected over 2,000 time diaries asking respondents to indicate what they did on a particular day

(“tomorrow”) for the entire 24 hours, with each day of the week equally represented. In addition to the primary activity engaged in and the time it began and ended, respondents also listed where they were, with whom, and any secondary activities they were engaged in. Using the same open-ended diary approach and subsequent classification scheme, time-diary studies of Americans’ use of time have been conducted each decade by the Institute for Social Research at the University of Michigan and the Survey Research Center at the University of Maryland beginning in 1965 (Robinson, 1977; Robinson & Godbey, 1999).

Respondents’ open-ended time diaries are classified into 96 basic code categories. The first main distinction is between non-free time and free time. Non-free time includes paid work, household work, child care, obtaining goods/ services, and personal needs and care; Free time included education and training, organizational activities, entertainment/ social activities, recreation, and communication.

It is the free time category-- and its role in everyday life that this dissertation will concern (see Appendix B). Free time, which includes socializing, media, culture, hobbies, recreation, religion, voluntary organizational activities and communication activities are the activities that furnish individuals with maximum choice, pleasure and personal expression (Robinson, 1977; Robinson & Godbey, 1999). Background factors such as age, sex, race, social status and education were demonstrated to play an unexpectedly insignificant role in the variance of amount of free time as compared to other types of time (Robinson & Godbey, 1999). In general, the largest factors associated with differences in free time are due to role factors such as marital status, estimated workweek, and the presence of children. Furthermore, the amount of free time in

America (for all people aged 18-64) has steadily increased from 35 hours per week in 1965 to an average of 40 hours per week in 1985 (Robinson & Godbey, 1999).

Findings from the time-diary studies have been supported by high reliability on the aggregate level both across time, method (telephone, mail-back, personal interviews) and place (national time diaries vs. single site). Likewise, their validity has been established through multiple independent methods of observation: random interval beepers for separate one-day periods, telephone interviews of “random hours” reported in the time-diaries, and shadowing techniques over 12-hour periods (for a full discussion see Robinson & Godbey, 1999). Aggregation of single-day diaries thus offers valuable, generalizable information about the ways Americans spend their time. However, describing tradeoffs and trends in the structure of daily life over time sheds little insight on the variability of lifestyles at the individual level.

In sum, the goal of time-diary methods is to achieve unbiased estimates of the mean amount of time spent in the population as a whole. The most micro-level analyses considered in time-diary studies to date, are descriptions and models of household behavior; this dissertation considers the individual distribution around the mean. Thus, the classification scheme and documented role of various background factors in time-use reported by the studies above closely guided the methodology of my dissertation; yet, I concentrated on individual differences in time use. Important distinctions from time-diary studies were (a) the expanded observation period of behavioral frequencies beyond one 24 hour period, (b) the form of data collection as a checklist to reduce the labor intensive methods outlined above, and (c) the exclusive focus on free time behaviors³.

³ My definition of free time includes some activities otherwise coded in time-budget studies; for example, various household activities.

METHODOLOGICAL CONCERNS: SELF-REPORTED BEHAVIORS?

An obvious critique of an inventory of behavioral experiences that is critical of self-reports of subjective states is that, it too, utilizes self-reports. A concerted effort was made to reduce the influence of reports of behavior due to response bias and personality dispositions by eliminating subjective evaluations about internal states and items for which there are obvious desirability standards. Specifically, in accordance with Zautra et al. (1986, 1991), “contamination” was minimized by asking respondents to report the frequencies of observable and clearly identifiable events.

A frequent problem in time-use studies is that a majority of quotidian behaviors do not leave a memorable or measurable trace to serve as a proxy. Memories are skewed towards salience. Consequently, overestimates are typical when asked “how much time did you spend doing X?” within a specified time period (Juster & Stafford, 1991; Schwarz, 1993; Schwarz & Oyserman, 2001). Valid estimates are encouraged by questioning activities with regular schedules (i.e.: routine behaviors) (Juster & Stafford, 1991). Additionally, asking questions that require retrieval of specific recent episodes of a designated type enhances recall (e.g. the last occasion on which you took the bus to work) (Kahneman et al., 2004). One of the ways I attempted to circumvent problems associated with estimating time-use in this dissertation research was by developing a scale on which respondents were simply asked when the last time each everyday behavior occurred: within the last 24 hours; within the last 2-3 days; within the last week, within the last month, more than a month ago, and never) as opposed to how many times an event has occurred.

Beyond their face validity, how do we know the behaviors reported truly represent or agree with objective behavioral assessments? Paunonen (1998, 2003; Paunonen & Ashton, 2001) has indicated that self-reports of objective behaviors are reliable and valid because the questions are “innocuous” queries of occurrence or frequency, as opposed to less trustworthy ratings subject to judgment, memory errors, or desirability biases (see also Schwarz & Oyserman, 2001). Additionally, Paunonen (2003) shows the mean convergence of self-peer ratings on 39 behaviors across domains, from number of traffic violations to number of parties attended, to be an impressive .52. Peer reports of specific acts such as number of alcoholic drinks per week and number of cigarettes smoked per day have reached validity estimates as high as .70 and .92 respectively (Paunonen, 2003).

One concerted effort to bypass self-report in recent years has centered on individual linguistic style (Pennebaker, Mehl, & Niederhoffer, 2003; Mehl & Pennebaker, 2003; Pennebaker, 2002). This approach is founded on the premise that the individual’s word choice is uniquely revealing about the speaker or writer’s psychological orientation (Pennebaker, 2002; Hart, 2001). From the frequency and particular parts of speech (i.e. pronouns, emotion words, cognitive words), one can gain a deeper perspective, perhaps more accurate than a self-report of psychological experience (Pennebaker, 2002). Research to date, has reliably linked word usage to personality (Pennebaker & King, 1999), mood (Weintraub, 2000); self-esteem (Bosson, Swann, & Pennebaker, 2000), and social status (Giles & Coupland, 1991).

In this dissertation, language is used as convergent validity criteria. That is, do the behaviors of daily life, as assessed through open-ended descriptions of one’s routine

behavior show the same structure as self-reports? Through factor analysis of content words, we can detect latent variables in the same way one would with a questionnaire meant to assess the totality of the behavioral landscape. By comparing the interrelations of the structures of these two methodologically distinct assessments, we can capture an estimate beyond the face validity of the behaviors in question.

PREVIOUS RESEARCH ON LIFE

The Large Inventory of Frequent Experiences (LIFE) Questionnaire was originally created to capture the more basic but fundamental aspects of peoples' lives (Niederhoffer & Pennebaker, 2000). The original version was constructed by nominating general themes and activities relevant to varied lifestyles. The questionnaire assessed how much respondents liked different foods (e.g., tofu), activities (taking showers), social issues (women who stay at home), and common objects (e.g., PC's); and, how much they thought about various life themes (e.g., having children, becoming famous, weight, money) on a 7-point Likert scale. Time and money spent were assessed in hours per week (e.g., on the internet, watching TV), and dollars per month (e.g., video rentals, groceries). The five-factor structure obtained is displayed in Figure 1.

With the aim of testing the cross-sample generalizability, a second version of the survey was created and modified in one important way—the majority of items were converted to acts that respondents could rate the frequency with which they engaged in them (ranging from Within the last 24 hours to Never). By including a more behavioral conceptualization of the items included in the first version, we sought to reduce the room for subjective construal associated self-reported preferences (e.g. 'How conscientious are you'? vs. 'When was the last time you read a scientific journal article, spent money on organic food'?).

Although items were slightly modified, maintaining preference items with key factor loadings allowed us to superficially examine whether dimensions of daily life would generalize from self-reported preferences to the corresponding behaviors. That is,

using nearly identical items, does the mere scale change from ‘preference for’ to ‘frequency enacted’ change the structure of life experiences?

Figure 1. Factor Structure of Preferences, Thoughts, and Time Expenditures Designated in Previous Research on LIFE (Niederhoffer & Pennebaker, 2000).

Factor	Brief Description of Characteristic Item Loadings
Community Mindedness	Liking other people, their family and other social institutions
Intellectual factor	Like quiet and educational activities such as going to the library, reading, poetry, gardening, and watching documentaries
Romantic	Thought patterns associated with attractiveness, marriage, having children, and the future
Rogue	Thoughts about sex and aggression and time spent going to bars and watching sexually explicit and graphically violent movies.
Good ole’ boys and girls	Time spent hunting and fishing, and preferences such as red meat, BBQ, small towns, and pick-up trucks

For the most part, behaviors associated with each concept considered in the first questionnaire (with desirable psychometrics) were included in the second version. The activities ranged across the frequency with which participants listened to various types of music, watched different types of television, read various forms of media, spoke to varied types of people (ethnicities, religion, occupations), engaged in varying methods of communication (email, cell phone, Instant Messaging, etc.), consumed selected types of

food and drink, and engaged in miscellaneous health activities (took vitamins, went to doctor).

Indeed, items that clustered together on the original factor analysis again revealed similar covariance. The most striking difference was the segregation of behaviors and preferences (see Figure 2). For example, while the first factor included *preferences* similar to the previous Community-minded factor (identifying with the state, city and community one lives in as well as most Americans), only one *behavioral item* loaded on the first factor. Ideally, having translated preferences into actions, a factor structure would emerge that integrates likes and behaviors—as the saying goes, “Talking the talk, and walking the walk.” People who report identifying as an environmentalist, ideally will also report recycling, and driving a fuel efficient vehicle. It became clear from this segregation that self-views and behaviors offered two different perspectives. Specifically, the emergence of strong belief systems (e.g. the Conservative and Liberal factors) independent of behaviors led us to believe that behaviors are simply a different domain by which individuals can be assessed, worthy of more thorough investigation.

OVERVIEW AND IMPETUS

The review of relevant literature from personality, from the study of individuals in the context of daily life and from the small amount of research in the space between, has revealed a gap in the literature regarding the relationship between naturalistic, everyday individual behavior and personality. The main goal of this dissertation was to create a labor inexpensive method of assessing everyday behaviors to serve as an alternate lens of personality. This new inventory was created to measure objective, high-incident activities sampled from the totality of the day's experiences.

Figure 2. Segregation of Self-Theories and Behaviors from Previous Research on LIFE

Factor	Preferences/ Thoughts	Behaviors
Conservative	Like republicans; identify with most Americans; do not approve of gay unions or abortion	
Intellectual	Identify as feminists, democrats, environmentalists and vegetarians; like welfare and universal health care	Read the national news, listen to jazz and classical music, meditate, read scientific journals, watch foreign films, and public television and spend money on organic food.
Adjustment to college		Spend money on diet pills, bingeing, crying, going to the doctor, taking medicine, fighting with friends, and a host of physical symptoms (headache, backache, insomnia, diarrhea, joint pain).
Rogue	Report thinking about sex and aggression	Drink beer and hard liquor, getting drunk, smoking tobacco, liking sex and masturbation, spending money on nightlife and cigarettes.
Good Ole' Boy and Girl	Like hunting and fishing, red meat, BBQ, small towns, and pick-up trucks	
College Life		Spend money on fast food; Instant Messaging; watch reality TV and MTV, listening to pop and rap and play computer games

One critical shortcoming in the previous LIFE findings was the limited item generation process with a potentially disproportionate number of questions pertaining to certain lifestyles (socially active) at the cost of others (Restorative/ work life). To address this issue, the research began with a thorough item generation process to capture a representative range of items that more wholly characterize how people spend their time. Second, strict criteria were imposed on the behaviors included on the inventory as a result of a more extensive literature review across domains. Lastly, an accepted battery assessing the broad aspects of personality was incorporated to investigate what traditional personality information is conveyed by the behaviors of everyday life.

STUDY 1: ITEM GENERATION AND BEHAVIORAL INVENTORY DEVELOPMENT

The overall goal of Study 1 was to generate a meaningful list of behavioral items that represent the totality of everyday life. There are multiple ways a sample of items can be elicited, each with a series of costs and benefits. Overall, the largest hurdle in gathering descriptive data involves the time and labor required to collect and subsequently mine through what is amassed. As Kahneman et al. (2004) point out, although time use has far ranging implications for medical researchers, epidemiologists, economists, policy researchers, and others, there is no generally accepted method for collecting the relevant data.

A logical place to start would be to conduct a full-fledged time-diary study. Although the most time-intensive, the data collected would be, decidedly, the most rich. Problems still arise in dictating the level of event specificity participants record. The difference in the naturally occurring level of detail recorded by participants could be an individual difference in and of itself. Furthermore, someone who reports “got up, ate breakfast” as compared to another who logs “woke up to the alarm clock, washed face, made eggs and toast, sat down at the table with the paper to eat breakfast” presents a large obstacle in the effort of collecting comparable nominations to pare down to more distinct categories.

Supposing one could accomplish generating a pool of sufficient events, another set of concerns might arise in the culling of behaviors. What are the strategies for imposing criteria of inclusion as to which behaviors are worthy of investigation? What are the criteria for combining behaviors into larger domains? Next, who would the

sample be? The more representative a sample, the more diverse nominations would amass to comb through.

In order to tailor the investigation of behaviors to the specific level of interest for an examination of personality defined by everyday behaviors, the first stage of item generation was accomplished by relying on a recently released existing data source. The American Time Use Survey (ATUS) is a federally funded, continuous survey designed to quantify time use in the US, primarily for the purposes of economists and social policy researchers. The most recent data, from 2003, were released on January 12, 2005 (www.bls.gov/tus). The data provide a detailed account of an entire day's worth of activities for over 20,000 respondents.

Using this data not only ensured adequate sampling of the totality of behaviors, but provided a sample of participants large enough to invoke demographic criteria and still maintain a broad base from which to make generalizations, and a universe of behaviors large enough to invoke criteria tailored to the psychological goals of this investigation.

Data Preparation

The ATUS, which lasts 15-20 minutes, is conducted by telephone interview on a representative sample of Americans involved with the Current Population Survey (CPS). Respondents are asked to give a detailed account of their activities for 24 hours from 4 a.m. prior to the day of interview to 4 a.m. on the interview day. The activities are recorded from participants verbatim, then converted into a 6-digit code. For each activity,

the respondent indicates the start and stop time (or activity duration), who else was involved, and the location of the activity.

The first 2 digits, ranging from 1-17 refer to one of 17 higher level activities: (01) Personal Care; (02) Household activities; (03) Caring for and helping household members; (04) Caring for and helping non-household members; (05) Work and work-related activities; (06) Education; (07) Consumer purchases; (08) Professional and Professional Care services; (09) Household services; (10) Government services and civic obligations; (11) Eating and Drinking; (12) Socializing, Relaxing and leisure; (13) Sports Exercise and recreation; (14) Religious and spiritual activities; (15) Volunteer activities; (16) Telephone calls; and, (17) Travel. Each category is further divided into 2 more levels of specificity (“tier 2” and “tier 3”) pertaining to that category.

The data are displayed at the instance-level such that each row indicates the classification of each of the respondents’ activities in the three tiers described above (e.g. 050103 = 05: Household activities; 01: Indoor Cleaning; 03: vacuuming), the activity’s duration in minutes, location, and other people present. A person’s entire day can thereby be described by 8-30 rows of data depending on how many activities they reported engaging in. Each activity was transformed into its own dichotomous variable, resulting in a total of 103 Tier 2 variables and 196 Tier 3 variables. Each of the respondents’ 6-digit activity classifications were then recoded into these different variables yielding a dataset that indicated whether or not respondents had engaged in each of 316 activities. Ultimately, each variable was multiplied by the total duration of each activity in minutes and respondents’ activities were aggregated (such that each respondent was represented by one row of data). In the final dataset, each row was characterized by one respondent’s

1440 minutes. The average number of activities reported per person was 12.25 (SD = 8.76).

Criteria Imposed

To review, the purpose of using the ATUS data was item generation for the subsequent behavioral inventory. Thus, to determine the daily activities relevant to our research goals and most closely approximating those in the expected sample, numerous sets of criteria were applied.

Demographic Composition and Subsequent Criterion

The ATUS data includes 20,720 respondents between the ages of 15 and 80 (mean age = 45.6, SD= 17.3; median = 44). Females made up 56.3% of the sample. Weekends and weekdays are equally sampled with 10.4% of cases on Mondays; 10.4% Tuesdays; 9.7% Wednesday; 9.5% Thursday; 9.6% Friday; 25.3% Saturday and 25.3% Sunday. Sixty-two percent of the sample do not have children. One percent of the sampling occurred on a holiday.

Due to characteristics of the sample of participants most readily available for distribution of the behavioral inventory (e.g. university students), the ATUS sample was reduced to all respondents between 18 and 27 years of age (inclusive; n=2,270; (just in case: 5,843 = 18-36); without children⁴ (n= 1,542; 2,529); not in high school (n=1,476; 2,391); including weekdays and weekends. The final sample size was 1408 respondents with a mean age of 22.7 (SD = 2.96). Females composed 56.8 percent of the sample.

⁴ One of the reported findings of the 2003 ATUS indicated that adults without children in the household spend approximately 1.4 hours more per day engaged in leisure activities than those with children.

Base-rate Behavioral Criteria

Many of the coded categories of behavior are infrequently engaged in by respondents. This is a result of the specification of various activities of particular interest to the census and BLS. For example, given the BLS' interest in volunteerism, 7 types of volunteer activities are encoded at the tier 2 level (e.g. Social Service and Care activities) and 24 further tier 3 level types of activities are nested within (e.g. food preparation). As a result of the specificity of the activities, within the selected demographic, certain activities are only engaged in by 3 tenths percent of the sample (re: 3 people). Thus, those activities where 3 percent or more of respondents had never engaged in the behavior were eliminated from the analyses.

Personal Criteria Relevant to Research Goals

An additional set of criteria relevant to the goal of this project was applied to the pool of behavioral items that satisfied all the above criteria. Recall that the goal of the project is to investigate personality as conceived by objective everyday behaviors. Most importantly, each behavior included on the inventory had to have a likely possibility of engaging in it everyday. This eliminated items such as job interviewing and using lawn and garden services. Second, behaviors also had to be objective. In accordance with Pytlik Zillig et al.'s (2002) definition, behaviors included on the inventory had to be overt and directly observable actions, including both active (e.g. bike-riding) and passive (e.g. watching television), but not strictly mental events (e.g. thinking). Third, behaviors had to have a discrete end and beginning (not e.g. 'started eating healthy'). Lastly, behaviors that strictly pertain to working, paid hours were eliminated so that each item was relevant

to free time behavior (see Appendix B for empirical derivation of the criteria for selecting free time behaviors). Much effort was taken to ensure that the behavioral acts included were not ones for which the self is the only person privy to enactment. Ideally, this would enable future implications for more objective assessments through recent technology such as pattern-recognition visual software or radio frequency identification (Pentland, Picard & Maes, 1996).

Inventory Development

Using the abovementioned sample of 1408 ATUS respondents between the ages of 18-27, a principle components factor analysis was performed to determine the major dimensions of American's time use. Because the purpose of this step was to reduce the behaviors reported to a smaller, more efficient set of items to include in the subsequent inventory, principle components was selected over principal axis; however, each type of analysis was considered. Entering all activities that fit the criteria yielded 5 higher-order factors accounting for 54.8% of the total variance. Multiple solutions were considered using different rotations; however, the 5 factor structure determined with varimax rotation was the most sensible given the naturally existing low correlations between factors. The 5 factor structure was also the most easily interpreted with sensible groupings of behaviors. Varimax rotated factors are presented in 1.

The main factors of activities were labeled: Household Management; Tame Social Activities; Indoor Hobbies; Responsible/ Conscientious Activities; and, Costly Social Activities. Each of the items with a factor loading greater than .10 was included on an initial list in assembling the subsequent inventory. When necessary, more specific examples prototypical of the behaviors in each category were derived by a panel of

judges with access to the lexicon provided by the BLS. For example, ‘computer use for leisure’ was broken down into ‘surfing the web’, emailing, participating in an internet chatroom and online shopping.

Importantly, the goal of this analysis was merely for item generation for the next phase of research; thus, scale reliabilities and further analyses dealing with the replication of this structure were unrelated to the primary goals of this phase. This deduction of everyday behaviors from this national dataset provided a base from which a more narrow scope of activities could be tailored to the level of specificity desired in the current project.

Supplemental Item Generation

After an initial list of activities was assembled, a thorough review of scales from related research resulted in the inclusion of 12 more items: Paunonen and Ashton’s (2001) Behaviour Report Form; Oulette and Wood’s Habits of Daily Life; Goldberg’s (in press) Behavioral Clusters; Zautra et al’s (1986) Inventory of Small Life Events; Mehl and Pennebaker’s (2003) Social Environment Coding Scheme; and Robinson’s (1977) infrastructure of national time use categories. The list was then supplemented by items from previous versions of the LIFE questionnaire (Niederhoffer & Pennebaker, 2000) that demonstrated significant correlations to objective measures (GPA) and/ or discriminated well between previously established clusters.

The final list of assembled items was re-rated by a panel of judges on the above criteria to determine the appropriateness of the items included. Appendix A includes a list of all items generated and their respective fulfillment of the criteria imposed.

Table 1
Varimax Rotated Factors from American Time Use Data

ITEMS	1	2	3	4	5
Factor 1: Household Management					
Groceries	.684			-.117	
Storage	.611	-.107			
Food	.557			.183	
Laundry	.333	.134			.123
Interior cleaning	.319			.231	
Lawn care	.260				
Mail	.227				
Finance	.200				
Music	-.107				
Factor 2: Tame Social Activities					
Television		-.626	-.182	.108	-.136
Movies		-.601			
Grooming		.597			-.111
Computer use for leisure	-.107	-.354			-.217
Socializing with others		.264			-.186
Religious practice		.264			
Talking on telephone to family		.214			
Relaxing		.207			
Social Events		.184			
Writing for personal use		-.181			
Attending sporting events		.139			
Attending arts events		.136			
Factor 3: Indoor Hobbies					
Hobbies			.786		
Interior decorating			.575		
Talking to friends on the phone			.483		
Games			.211	.146	
Factor 4: Responsible/ Conscientious Activities					
Reading		-.164		.616	.105
Taking care of pets				.476	
Research/ homework				.312	
Attending museums				.298	
Buying gas	-.102			-.264	.234
Participating in sports		.148		-.223	
Working on vehicles	-.117	.100	-.133	-.205	
Exterior maintenance				.172	
Factor 5: Costly Entertainment					
Attending films					.638
Buying prepared foods	-.109			.180	.500
Going out to eat	.192				.342
Emailing		-.109		-.129	.300
Spa services		-.145			.236
Tools					.168
Household planning		-.108			.132
Volunteer work					-.126

To review, the specific criteria for inclusion of activities were as follows:

1. Behaviors could be done everyday (quotidian)
 - a. Must be objective
 - b. Must have high incidence
2. Must be engaged in during free time (not during working, paid hours)
3. Must have a discrete beginning and end (not e.g. ‘started eating healthy’)
4. Must not require subjective judgments of internal states

Ultimately, 88 items that satisfied the above criteria were included on the inventory. In pilot testing, 10 were eliminated because of criteria violations or poor psychometrics. The removed items were: purchased something from a catalog (94.1% sample indicated having done it more than a month ago or never); yard work (correlation with Exterior Repairs: $r=.92$); went to a medical doctor (violated high incidence); traveled outside US (violated likelihood of being an everyday behavior 85% of sample indicated more than a month ago or never), traded stocks (96% never enacted), Took an entrance exam (98% indicated having done it more than a month ago or never); got a haircut (68% indicated having done it more than a month ago); and, finally 3 items were eliminated because of their exclusive interest to a student population (participated in a study group, organized notes for class, and wrote a paper, short story or essay). The resulting 78 items comprised the subsequent behavioral inventory (see Appendix A).

Discussion

The main benefit of relying on the ATUS data was insurance that the total spectrum of ways a diverse group of people spend their time was accounted for. The advantages of a comprehensive survey that samples across major demographic groups and geographic regions are incomparable to the typical methods of research in personality and social psychology. The alternative of creating more subjective, inductive categories without this empirical basis would invoke bias at a critical stage of the research.

Certainly, there are biases that go into the formation of the ATUS given its intended applications for economists and policy researchers. However, the time, labor, and financial costs associated with other methods of item generation are far outweighed by the comprehensiveness, relative objectivity and ease with which the broad framework of items was generated here.

STUDY 2: THE STRUCTURE OF EVERYDAY BEHAVIOR AND ITS RELATION TO TRADITIONAL ASSESSMENTS OF PERSONALITY

The general structure of daily behaviors was explored in Study 1 with the American Time Use Data as an aid in item generation. As mentioned earlier, given the economic as opposed to psychological goals of that data collection effort, the level of specificity and scope of behaviors included were not in line with the current research goals. Having generated a list that satisfied the criterion for objective, everyday, free time behaviors, the primary objective of this next phase of research was to (a) identify the basic structure of everyday behaviors; (b) determine whether everyday behaviors would generalize across time; (c) examine individual differences in behaviors; (d) investigate the relationship of everyday behaviors to personality; and (e) consider the role of language as an alternative measure of construct validation.

To accomplish these goals, the inventory of items was distributed to a large sample of respondents along with a traditional inventory of personality assessment. The goal of the behavioral inventory was to determine the underlying dimensions of behaviors based on individual differences in *how recently each behavior had been performed*. The metric used was critical to the goals of this project. The intention was to assess, objectively, when the last time each behavior was performed—if not within the last few days, it is most likely not a behavior consistently performed on an everyday basis. The underlying logic was that this method more closely discriminated between those things people actually have done and their theories of how often they would like to be seen as doing something. Likewise, it bypassed the common inability to approximate frequencies over time (Stone, Kessler, & Haythornthwaite, 1991). To test stability over time, the

same behavioral inventory was re-administered to a subsample of respondents 6 weeks after the initial administration.

Participants

The total sample consisted 689 participants. Of those who indicated their sex, 222 (32.2%) were male; 464 (67.4%) were female. Ages ranged from 18-76 with an average age of 26.8 (SD=10.0). The source of participants was variable. In order to reach an older, more diverse sample, snowballing techniques with an emailed link as well as a post on a local bulletin board resulted in 415 of the total participants (69.4% female; Mage=31.3, SD=10.6). Additionally, 204 (64% female; Mage=19.4, range: 18-27) were University of Texas students who volunteered in exchange for extra credit in a Communications course; 56 were University of Oklahoma students (Mage=22.2, SD=3.0) who volunteered in exchange for extra credit in a Psychology course; and, 14 were University of Texas Psychology students who volunteered in exchange for partial fulfillment of an experimental credit requirement. In total, 361 participants were students (including undergraduate and graduate).

All participants received feedback on their personality and behaviors in return for their participation. Originally, data from 701 participants were collected; however, based on a missing value analysis, the data from 12 participants were eliminated due to either an excess of 20 questions skipped, or 30 extreme responses (re: selecting the same answer to over a third of questions). All of the eliminated cases were students.

A randomly selected subset (n=205) were emailed an additional link 6 weeks later to assess test-retest reliability of the behavioral inventory and were again offered feedback in return for their participation. One-hundred-eighty-four (90.1%) responded.

In terms of location, in total, 369 participants were from locations in the West South Central region including TX, OK, AR, and LA; 70 from the Pacific including CA, OR, and WA; 68 from the Northeast region including NY, NJ, CT, MA; 41 from the Midwest, including MN, IL, OH, IN, and MI; 39 from the South, including FL, GA, SC, NC and Washington DC; 20 from the Mountain Region, NM, CO, UT, and ID; and, 17 from outside of the US (Australia, Asia, Europe, India, and Mexico).

Measures

Behavior

LIFE. As explained in Study 1, the inventory consisted of 78 behavioral items. The scale included 6 response options: Within the last 24 hours; within the last 2-3 days; within the last week; within the last month; more than a month ago; and, never.⁵ The questionnaire asks participants to indicate “when was the last time you...” enacted in each behavior.

Personality

Big Five Inventory (BFI; John & Srivastava, 1999). The BFI assesses views of self across 5 broad personality domains: Extraversion, Agreeableness, Emotional Stability, Conscientiousness, and Openness. The questionnaire includes 44-items with a 6-point

⁵ Although many have commented on the apparent oversight of an additional category “within the last year;” it was specifically not included given the focus of the research on everyday behavior. Essentially, if a behavior has not been enacted in the last week, it is not likely relevant to one’s routine behaviors.

scale ranging from Strongly disagree to Strongly agree. The questionnaire asks participants to indicate “to what extent you agree that the statement reflects your personality” and is preceded by items such as “is talkative” and “tends to be lazy.” The scale has been estimated to take approximately 5 minutes (John & Srivastava, 1999). All participants completed the BFI.

Language

Language was collected via written descriptions of routine weekend life and subsequently analyzed using Linguistic Inquiry and Word Count. Participants were given the following instructions: “For the next 10 minutes, your task is to simply write about your weekend activities. That is, describe your Saturdays and Sundays from the time you wake up until the time you go to sleep. What do you usually do? How do you spend your free time? Do you have a routine? If you don't have a "typical weekend," describe what you did last weekend, or what you plan to do next weekend.”

The subsample of participants who completed the additional personality questionnaires also provided an additional brief writing assignment. Their task was for 5 minutes, to describe a picture of a semi-full plastic water bottle. They were instructed to write about the picture as though they were describing it to someone who could not see the picture.

Demographic Information

Participants also supplied their ethnicity, social class, education level and marital status of self and parents, employment status and sexual orientation.

Procedure

The behavioral inventory was initially administered online from Tuesday, February 8th, 2005 through Tuesday, March 29th, 2005. After a thorough description of the questionnaire, and informed consent, all participants completed the behavioral items. After a brief break, they completed the written exercise, followed by the BFI and brief battery of outcomes.

A link to the additional personality questionnaires was sent out approximately 2 weeks after participants initially completed the first set of questionnaires in order to reduce boredom and fatigue in answering questions.

Results

I. Preliminary Analyses of Personality Measures

To ensure that the traditional personality measures functioned as expected, a series of preliminary analyses were conducted. First, internal consistency reliabilities were computed for each scale. For the BFI, α s (reported on the diagonals in Table 2) ranged from .79 for Agreeableness to .89 for Extraversion. These values are typical of those reported in other studies using the BFI (John & Srivastava, 1999). Intercorrelations amongst the Big Five Factors were higher than expected with significant relations emerging among all scales except for openness which did not significantly correlate with Conscientiousness and Agreeableness. These analyses are reported in Table 2. As Goldberg (1992) has pointed out, the high reliabilities of the Big Five scale scores often attenuate their discriminant validities. Although the Big Five are orthogonal dimensions,

the high correlations amongst scale scores computed for these dimensions suggests that perhaps each scale is partially tapping into a similar dimension.

Multivariate analyses of variance indicated a significant difference for sex, such that women score higher than men on Conscientiousness $F(1,676)=6.6$, $p=.01$, and lower on Emotional Stability ($F(1,676)=64.9$, $p<.01$) and Openness $F(1,676)=4.4$, $p<.05$. Entering age as a covariate, significant differences emerged for Emotional stability ($F(1,678) = 21.9$) and Openness ($F(1,678) = 40.5$) such that older participants had higher scores.

Table 2
Intercorrelations of BFI Scales and Relations with Age and Sex

	EXTRAVERSION	AGREEABLENESS	CONSCIENTIOUS- NESS	EMOTIONAL STABILITY	OPENNESS
E	(.89)				
A	.15*	(.79)			
C	.21**	.22**	(.81)		
ES	.29**	.30**	.23*	(.85)	
O	.18**	.06	.02	.18**	(.81)
	AGE	SEX			
E	-.10	.02			
A	-.06	.21**			
C	-.02	.17*			
ES	.00	-.30**			
O	-.08	-.09			

N= 689 Scale reliabilities in parentheses, * $p<.05$; ** $p<.01$

II. Item-level Behavioral Base-rate Information

Table 3 shows the distribution of activities for all participants. Recall that the scale used ranged from within the last 24 hours to never; thus, the means depicted in Table 3 indicate how recently participants had engaged in the various activities.

Additionally, by using the SPSS Count function, a variable was computed for how many

times participants attributed the value “within the last 24 hours” to a behavior yielding the number of behaviors each person enacted within that timeframe. The mean number of activities, 14.8 (SD = 4.3) is comparable with the national American time use statistics (Robinson & Godbey, 1999; BLS, 2003) and research using the recently developed Day Reconstruction Method (Kahneman et al., 2004) who similarly report that the average number of episodes participants recall in constructing a short diary of the previous day is 14.1 activities (SD of 4.8). The same statistic was computed for “within the past 2-3 days,” resulting in 8.1 activities (SD =3.64) generally performed at a bi-weekly rate, and 7.5 activities (SD=3.4) at a weekly rate.

Overall, the analyses revealed that the behaviors most frequently performed on a daily basis (within 24 hours of respondents participation) are taking a shower (m=5.8, SD=.61), surfing the web (m=5.74, SD=.81), using a PC (m=5.61, SD=1.1), listening to the radio (m=5.37, SD=1.2), using an alarm clock (m=5.37, SD=1.3) and sending personal emails (m=5.06, SD= 1.3). All activities ranged along the complete scale, from having never been done to being done within the last 24 hours with 4 exceptions: No participants reported “never” having taken a shower, spoken to their parents, surfed the web, and having gone out to eat. Already, the methodological benefits of the scale itself and the objectivity of behaviors in question are apparent, as “fakers” can more easily be detected. Anyone who claims “never” to have showered, for example, can immediately be tagged as questionable.

Table 3
Distribution of All Behaviors for All Participants (N=689)

ABBREVIATED ITEM	M	SD					
Bought groceries	4.43	1.19	online chat			Read nonfiction	3.68 1.68
Cooked full meal	4.43	1.57	Wrote in journal/ diary	2.76	1.59	Played with/took care of dog	3.16 1.83
Did laundry	4.45	1.15	Smoked cigarette	2.41	1.74	Played with cat	2.71 1.91
Vacuumed	3.35	1.30	Talked on phone to parents	5.05	1.19	Went to museum/gallery	2.52 .966
Made bed	4.64	1.53	Went to bible study	1.85	1.06	Bought gas	3.88 1.46
Changed sheets	3.20	1.28	Did nothing	4.92	1.44	Went running	3.11 1.58
Wrote handwritten letter	2.80	1.31	Went to special interest group	2.67	1.50	Did yoga	1.91 1.26
Balanced checkbook	2.72	1.70	Attended performing arts	2.55	1.07	Played billiards	2.25 .911
Made to-do list	4.57	1.50	Worked on hobby	3.43	1.59	Walked for exercise	3.55 1.71
Listened radio	5.37	1.19	Talked on phone >10 minutes	4.90	1.27	Worked out in gym	3.39 1.69
Played musical instrument	2.65	1.56	Received psych. counseling	1.70	1.04	Did exterior repairs	2.06 1.09
Played board game	2.67	1.01	Went to movies	3.05	1.11	Ate dessert	4.80 1.26
Played cards	2.81	1.19	Went shopping	3.89	1.26	Got drunk	3.05 1.50
Played computer game	3.24	1.69	Shopped online	3.29	1.44	Used a Mac	2.91 1.80
Watched 2+ hours television	4.41	1.44	Went to alternative health care provider	1.63	.945	Used a PC	5.61 1.10
Blow dried hair	3.60	1.98	Ate fast food	4.02	1.44	Read job ads	3.36 1.78
Took bath	2.84	1.49	Went out to eat (other than fast food)	4.59	1.16	Took vitamins	3.76 1.80
Took shower	5.81	.606	Sent personal emails	5.06	1.30	Rented video/DVD	3.39 1.36
Used mouthwash	3.64	1.73	Had a spa service	1.85	.969	Had sex	3.17 1.64
Surfed web	5.74	.811	Used a tanning bed	1.51	.912	Woke up to alarm clock	5.37 1.26
Downloaded music	3.33	1.78	Spent time organizing	4.24	1.38	Watched morning news	2.68 1.54
Spent time with family	4.09	1.54	Did volunteer work	2.60	1.22	Drank wine	3.37 1.57
Attended to religious service	2.53	1.21	Read fiction	3.40	1.61	Drank beer	3.39 1.62
Had argument w/ friend	3.06	1.40				Drank liquor	3.29 1.46
Hosted party	2.42	1.08				Sang in shower	4.71 1.54
Participated in	2.98	1.92				Took aspirin	3.85 1.50
						Read horoscope	3.26 1.57
						Chewed gum	4.12 1.64
						Flossed teeth	3.93 1.61

Scale: (6) Within the last 24 hours; (5) Within the last 2-3 days; (4) Within the last week; (3) Within the last month; (2) More than a month ago; and, (1) Never

*Behaviors listed in order of administration

How does this relate to the ATUS database? In comparing the “average days” of the current sample to the summary of data provided by the Bureau of Labor Statistics with regards to persons in the U.S. age 15 and over, one can appreciate the level of specificity realized from the criteria imposed and revisions made in Study 1. According

to the BLS, the average person, slept about 8.6 hours, spent 5.1 hours doing leisure and sports activities, worked for 3.7 hours, and spent 1.8 hours doing household activities. The remaining 4.8 hours were spent in a variety of other activities, including eating and drinking, attending school, and shopping.” From the distributions reported in Table 4, one can appreciate that the current project has honed in on the 1.8 hours of household activities and 9.9 hours of leisure, sports, and other activities.

Other interesting findings in relation to item-level baserates include the percentages of people who reported at the extremes, having never engaged in various activities, or having done them within the last 24 hours. For example, 212 participants (30.8%) reported never having balanced a checkbook whereas only 10 participants (1.5%) had never watched more than 2 hours of television. A surprisingly low percentage (n= 49; 7.1%) had never shopped online whereas 154 (22.4%) had chatted online within the last 24 hours. Lastly, more than half of participants reported having “done nothing” within the last 24 hours (n=354, 51.4%).

Are weekdays and weekend behaviors significantly different?

Because the questionnaire was posted online, participants had the opportunity to respond on any day of the week, including weekends. Past research on time-use has documented weekend behavior to be qualitatively different from weekday behavior (Robinson, 1977). Thus to examine differences in weekend and weekday behaviors, the day on which participants filled out the questionnaire was adjusted so that respondents between 6:01 p.m. on Fridays through 5:59 p.m. on Mondays were coded as “weekends.” Importantly, multiple recodes were assessed treating Friday and Monday reports

independently. It was empirically determined that Friday reports more closely matched Saturday and Sundays than they did other weekdays. With the recode, 478 participants responded on weekdays, and 212 on weekends. The distributions of scores are reported in Table 5 separately for students and adults. In general, relatively few differences emerged in weekday and weekend behaviors, validating the intent of the survey to focus on free time. Weekday life was especially similar to weekends for adults, with significant differences emerging for only 4 behaviors: yoga, blow-drying one's hair, going out to eat, and eating dessert (probably a function of being out to eat). For students, however, weekends reveal distinct differences from weekday life.

Table 4
Base rate Information on the Average Daily Behaviors (Performed Within the Last Week)

BEHAVIOR	MEAN	SD
TOOK SHOWER	5.81	.605
SURFED WEB	5.74	.811
USED A PC	5.61	1.09
LISTENED TO RADIO	5.37	1.19
ALARM CLOCK	5.37	1.25
SENT PERSONAL EMAILS	5.06	1.30
TALKED ON PHONE TO PARENTS	5.05	1.19
DID NOTHING	4.92	1.44
TALKED ON THE PHONE +10 MINS	4.90	1.27
ATE DESSERT	4.80	1.26
MADE BED	4.64	1.52
WENT OUT TO EAT	4.59	1.16
MADE TO-DO LIST	4.57	1.50
LAUNDRY	4.45	1.15
BOUGHT GROCERIES	4.43	1.19
COOKED MEAL	4.43	1.57
WATCHED 2+ HOURS TV	4.41	1.45
SPENT TIME ORGANIZING	4.24	1.38
TIME WITH FAMILY	4.10	1.54
ATE FAST FOOD	4.02	1.45

Table 5
Differences in Weekday and Weekend Behavior for Students and Adults

ABBREVIATED ITEM	Students				Adults				Effects
	Weekdays (n=300)		Weekends (n=61)		Weekdays (n=178)		Weekends (n=150)		
	M	SD	M	SD	M	SD	M	SD	
Bought groceries	4.19	1.21	4.28	1.25	4.65	1.06	4.71	1.13	A
Cooked full meal	3.87	1.66	4.39	1.60	4.83	1.33	5.07	1.16	A,W
Did laundry	4.42	1.07	4.48	1.21	4.40	1.20	4.55	1.21	
Vacuumed	3.11	1.24	3.57	1.29	3.53	1.26	3.53	1.36	W
Made bed	4.65	1.51	4.61	1.42	4.79	1.49	4.47	1.62	
Changed sheets	2.59	1.24	3.56	1.05	3.72	1.04	3.64	1.16	A,W,X
Wrote handwritten letter	2.77	1.30	2.64	1.18	2.85	1.38	2.85	1.26	
Balanced checkbook	2.64	1.70	2.77	1.61	2.83	1.80	2.75	1.58	
Made to-do list	4.69	1.51	4.69	1.36	4.53	1.58	4.33	1.42	
Listened to radio	5.15	1.32	5.33	1.32	5.66	.939	5.50	1.06	A
Played musical instrument	2.71	1.53	2.59	1.34	2.57	1.63	2.65	1.60	
Played board game	2.66	.896	2.61	.971	2.62	1.00	2.77	1.24	
Played cards	2.97	1.16	3.10	1.32	2.55	1.09	2.70	1.25	A
Played computer game	3.32	1.62	3.16	1.49	3.21	1.86	3.13	1.69	
Watched 2+ hours television	4.49	1.38	4.44	1.42	4.37	1.47	4.28	1.53	
Blow dried hair	3.67	1.94	4.21	1.94	3.70	1.99	3.09	1.97	A,X
Took bath	2.76	1.40	2.85	1.44	3.01	1.65	2.77	1.48	
Took shower	5.89	.420	5.85	.358	5.74	.737	5.69	.778	A
Used mouthwash	3.76	1.72	3.30	1.74	3.75	1.69	3.40	1.78	W
Surfed web	5.70	.857	5.59	.938	5.77	.801	5.85	.653	A
Downloaded music	4.06	1.75	2.84	1.52	2.81	1.68	2.70	1.51	A,W,X
Spent time with family	3.75	1.32	4.20	1.61	4.39	1.55	4.40	1.74	A
Went to religious service	2.81	1.28	2.43	1.23	2.35	1.14	2.21	1.01	A,W
Had argument w/ friend	3.28	1.42	3.13	1.45	2.82	1.33	2.87	1.36	A
Hosted party	2.36	1.09	2.44	1.00	2.57	1.17	2.35	.934	
Participated in online chat	3.45	2.01	2.82	1.78	2.45	1.70	2.75	1.82	A,X
Wrote in journal/diary	2.85	1.66	2.62	1.50	2.64	1.55	2.77	1.51	
Smoked cigarette	2.17	1.63	2.38	1.73	2.62	1.85	2.67	1.77	A
Talked to parents	5.33	.901	5.33	.908	4.72	1.32	4.77	1.44	A
Went to bible study	2.06	1.22	1.82	.940	1.71	.959	1.60	.777	A
Did nothing	5.05	1.32	4.92	1.41	4.67	1.63	4.93	1.42	
Went to special interest group	2.77	1.57	2.89	1.53	2.61	1.48	2.45	1.34	A
Attended performing arts	2.48	1.02	2.56	1.14	2.68	1.18	2.53	1.00	
Worked on hobby	3.44	1.55	3.15	1.48	3.57	1.64	3.33	1.67	
Talked on phone >10 minutes	4.97	1.26	5.00	1.21	4.94	1.20	4.67	1.35	
Received psych. Counseling	1.44	.793	1.62	.840	2.03	1.39	1.83	.944	A,X
Went to movies	3.01	1.02	3.25	1.28	3.16	1.14	2.93	1.15	X
Went shopping	3.87	1.18	4.00	1.39	3.87	1.26	3.91	1.36	
Shopped online	3.19	1.40	3.07	1.37	3.41	1.52	3.47	1.43	A

Table 5, cont.

Went to alternative health care provider	1.45	.723	1.49	.674	1.82	1.07	1.83	1.16	A
Ate fast food	4.29	1.36	4.43	1.37	3.77	1.46	3.63	1.49	A
Went out to eat (other than fast food)	4.53	1.15	4.74	1.13	4.76	1.08	4.46	1.26	X
Sent personal emails	4.60	1.43	4.77	1.49	5.60	.892	5.44	.973	A
Had a spa service	1.77	.959	1.59	.668	2.06	.996	1.87	1.02	A,W
Used a tanning bed	1.56	.981	1.72	1.19	1.49	.845	1.35	.657	A
Spent time organizing	4.25	1.39	4.41	1.44	4.22	1.30	4.18	1.42	
Did volunteer work	2.56	1.06	2.72	1.43	2.62	1.29	2.62	1.33	
Read fiction	3.01	1.42	3.18	1.59	3.81	1.76	3.78	1.60	A
Read nonfiction	3.09	1.52	3.15	1.59	4.19	1.64	4.48	1.54	A
Played with/took care of dog	2.85	1.58	3.20	1.88	3.37	1.95	3.51	2.02	A
Played with cat	2.23	1.50	2.67	1.91	3.03	2.09	3.33	2.16	W
Went to museum/gallery	2.44	.910	2.64	1.12	2.61	.952	2.55	1.01	
Bought gas	3.63	1.45	4.13	1.45	4.00	1.45	4.11	1.46	W
Went running	3.44	1.60	3.00	1.51	2.96	1.56	2.69	1.45	A,W
Did yoga	1.66	1.05	1.69	.904	2.38	1.56	1.93	1.20	A,X
Played billiards	2.34	.938	2.10	.870	2.22	.922	2.17	.849	
Walked for exercise	3.19	1.70	3.84	1.80	3.86	1.63	3.78	1.66	A,X
Worked out in gym	3.72	1.70	3.10	1.56	3.28	1.70	2.96	1.59	W
Did exterior repairs	1.81	.894	2.00	1.03	2.38	1.26	2.22	1.16	A
Ate dessert	4.84	1.24	4.75	1.36	4.93	1.13	4.57	1.36	W
Got drunk	3.09	1.59	3.28	1.49	2.96	1.34	2.99	1.47	
Used a Mac	2.93	1.72	2.75	1.65	2.87	1.83	2.99	1.95	
Used a PC	5.70	.969	5.90	.396	5.54	1.17	5.41	1.36	A
Read job ads	2.97	1.68	3.03	1.62	3.75	1.83	3.80	1.79	A
Took vitamins	3.55	1.80	3.21	1.63	4.10	1.80	4.01	1.75	A
Rented video/DVD	3.37	1.28	3.26	1.30	3.50	1.47	3.35	1.39	
Had sex	2.81	1.74	2.93	1.54	3.55	1.45	3.52	1.50	A
Woke up to alarm clock	5.63	1.03	5.51	.849	5.21	1.44	4.97	1.42	A
Watched morning news	2.68	1.51	2.61	1.35	2.81	1.63	2.55	1.54	
Drank wine	2.78	1.40	3.07	1.59	3.78	1.55	3.50	1.54	A
Drank beer	2.99	1.51	3.48	1.61	3.45	1.64	3.64	1.64	W
Drank liquor	2.88	1.40	3.62	1.53	3.34	1.35	3.44	1.55	W
Sang in shower	4.86	1.48	5.00	1.27	4.48	1.65	4.73	1.52	A,X
Took aspirin	3.45	1.44	4.02	1.40	3.92	1.58	4.05	1.42	W
Read horoscope	2.98	1.45	2.88	1.35	3.43	1.61	3.51	1.63	A
Chewed gum	4.33	1.58	4.43	1.64	4.00	1.65	3.92	1.62	A
Flossed teeth	3.85	1.64	3.34	1.51	4.26	1.58	4.00	1.5	A,W

Note: Far righthand column indicates effect. W = main effect for weekend; A = main effect for student; X = interaction. Standard Deviations displayed to demonstrate interindividual variability.

Are there individual differences in everyday behaviors?

Table 6 presents the descriptive statistics for each behavior for male and female participants analyzed separately as students and adults. Overall, contrary to the findings

of Mehl and Pennebaker (2003) and Mehl (2004), who reported that the daily social environments of male and female students recorded with the Environmentally Activated Recorder were highly comparable, everyday behaviors assessed in this fashion significantly differed by sex. Furthermore students' activities were significantly different from those of adults. In most cases, sex differences were especially pronounced in the student sample. This is of particular interest as there seems to be a minimization of a gender gap in the behaviors of older participants. That is, for students, females report having more recently done significantly more stereotypically female behaviors such as household chores and organization activities (vacuuming, laundry, grocery shopping); these differences dissipate in the older sample. Otherwise, the sex differences are not surprising, the largest being for blow-drying one's hair $t(687) = 28.0, p < .01$ and working on a vehicle $t(687) = 7.4, p < .01$.

Several significant differences emerged in comparing students' and adults behaviors, independent of sex, many of which would also be expected: primarily house chores (cooking a meal, vacuuming, doing laundry, buying groceries) performed more readily by adults and computer activities (chatting online, downloading music) by students. The number and magnitude of mean differences in sex and age (students vs. adults) called into question whether the interrelations of behaviors were parallel. That is, does the factor structure of behaviors of everyday life vary as a function of sex and being a student? After presenting the overall factor structure of behaviors, these analyses are presented.

Table 6
Sex Differences in Behaviors of Students and Adults

ABBREVIATED ITEM	Students				Adults				Effect
	Males (n=113)		Females (n=246)		Males (n=108)		Females (n=219)		
	M	SD	M	SD	M	SD	M	SD	
Bought groceries	4.00	1.19	4.30	1.23	4.70	1.14	4.66	1.08	A
Cooked full meal	3.81	1.67	4.04	1.66	4.81	1.33	5.00	1.22	A
Did laundry	4.28	1.18	4.49	1.05	4.39	1.28	4.52	1.18	
Vacuumed	2.97	1.27	3.29	1.26	3.37	1.32	3.61	1.30	S,A
Made bed	4.07	1.71	4.90	1.31	4.34	1.70	4.79	1.48	S
Changed sheets	2.60	1.14	2.83	1.32	3.63	1.13	3.71	1.09	A
Wrote handwritten letter	2.38	1.09	2.93	1.34	2.57	1.20	3.00	1.37	S
Balanced checkbook	2.35	1.71	2.79	1.66	2.81	1.69	2.79	1.72	
Made to-do list	3.98	1.78	5.02	1.20	4.24	1.57	4.54	1.49	S,X
Listened radio	4.86	1.57	5.32	1.17	5.53	1.00	5.61	1.00	S,A
Played musical instrument	2.91	1.79	2.59	1.35	2.87	1.75	2.48	1.54	S,A
Played board game	2.58	.923	2.69	.903	2.75	1.18	2.66	1.10	
Played cards	3.13	1.26	2.93	1.16	2.60	1.16	2.63	1.18	A
Played computer game	3.65	1.74	3.12	1.51	3.42	1.81	3.04	1.78	S
Watched 2+ hours television	4.65	1.34	4.41	1.40	4.34	1.49	4.32	1.52	
Blow dried hair	1.74	1.17	4.69	1.48	1.57	.823	4.33	1.78	S,A
Took bath	2.41	1.42	2.96	1.37	2.26	1.16	3.22	1.66	S
Took shower	5.90	.442	5.88	.396	5.83	.588	5.66	.822	S,A
Used mouthwash	4.00	1.73	3.54	1.72	3.88	1.84	3.44	1.67	S
Surfed web	5.93	.290	5.58	.990	5.94	.357	5.74	.858	S
Downloaded music	4.49	1.72	3.55	1.73	3.20	1.67	2.54	1.54	S,A
time with family	3.66	1.36	3.89	1.40	4.27	1.74	4.47	1.59	A
Went to religious service	2.77	1.31	2.74	1.26	2.30	1.07	2.27	1.10	A
Had argument w/ friend	3.58	1.50	3.10	1.37	2.92	1.38	2.80	1.33	S,A
Hosted party	2.60	1.33	2.27	.941	2.66	1.19	2.38	1.00	S
Participated in online chat	3.76	1.97	3.15	1.98	2.96	1.91	2.40	1.66	S,A
Wrote in journal/ diary	2.27	1.46	3.08	1.66	2.52	1.56	2.78	1.52	S,X
Smoked cigarette	2.43	1.85	2.10	1.55	2.59	1.79	2.65	1.82	A
Talked parents	5.21	.930	5.39	.882	4.45	1.39	4.88	1.36	S,A
Went to bible study	2.02	1.25	2.02	1.14	1.67	.976	1.65	.834	A
Did nothing	5.20	1.24	4.94	1.38	4.83	1.55	4.77	1.55	A
Went to special interest group	2.77	1.66	2.81	1.53	2.49	1.32	2.56	1.48	A
Attended performing arts	2.39	1.06	2.54	1.04	2.73	1.25	2.55	1.02	A
Worked on hobby	3.78	1.74	3.21	1.40	3.74	1.73	3.33	1.62	S
Talked on phone >10 minutes	4.64	1.44	5.13	1.14	4.62	1.32	4.90	1.26	S
Received psych. counseling	1.42	.842	1.50	.786	1.73	1.06	2.04	1.27	S,A

Table 6, cont.

Went to movies	3.05	1.08	3.04	1.07	2.92	1.04	3.12	1.20	
Went shopping	3.65	1.25	3.99	1.20	3.55	1.24	4.05	1.32	S
Shopped online	3.30	1.44	3.10	1.38	3.59	1.45	3.35	1.49	A
Went to alternative health care provider	1.36	.628	1.50	.749	1.57	.845	1.95	1.21	S,A
Ate fast food	4.71	1.15	4.12	1.42	3.83	1.31	3.63	1.55	S,A
Went out to eat (other than fast food)	4.54	1.30	4.57	1.09	4.70	1.21	4.58	1.17	
Sent personal emails	4.41	1.53	4.74	1.39	5.45	.961	5.56	.919	S,A
Had a spa service	1.47	.936	1.86	.884	1.66	.898	2.12	1.03	S,A
Used a tanning bed	1.29	.728	1.72	1.11	1.14	.347	1.57	.867	S,A
Spent time organizing	4.05	1.51	4.39	1.34	3.94	1.42	4.32	1.32	S
Did volunteer work	2.49	1.12	2.64	1.15	2.51	1.22	2.68	1.36	
Read fiction	2.82	1.41	3.15	1.47	3.56	1.72	3.91	1.66	S,A
Read nonfiction	3.27	1.71	3.03	1.44	4.64	1.46	4.16	1.65	S,A
Played with/took care of dog	2.84	1.63	2.92	1.64	3.50	1.99	3.39	1.99	A
Played with cat	2.04	1.41	2.43	1.65	2.94	2.05	3.28	2.17	S,A
Went to museum/ gallery	2.55	1.06	2.43	.900	2.59	.996	2.58	.975	
Bought gas	3.83	1.38	3.65	1.50	4.24	1.43	3.95	1.46	S,A
Went running	3.52	1.57	3.30	1.62	2.96	1.50	2.77	1.53	A
Did yoga	1.27	.710	1.84	1.11	1.64	1.06	2.44	1.51	S,A
Played billiards	2.58	1.07	2.17	.835	2.28	.905	2.16	.882	S,A
Walked for exercise	2.86	1.80	3.52	1.67	3.73	1.68	3.87	1.63	S,A,X
Worked out in gym	3.73	1.66	3.57	1.71	3.26	1.74	3.07	1.62	A
Did exterior repairs	1.99	.901	1.77	.924	2.53	1.22	2.21	1.21	S,A
Ate dessert	4.51	1.42	4.98	1.15	4.44	1.42	4.93	1.13	S
Got drunk	3.39	1.68	2.99	1.51	3.06	1.45	2.93	1.38	S
Used a Mac	2.86	1.63	2.93	1.75	2.81	1.83	2.98	1.92	
Used a PC	5.84	.689	5.68	.984	5.54	1.23	5.45	1.29	A
Read job ads	2.88	1.66	3.04	1.68	3.41	1.77	3.94	1.81	S,A
Took vitamins	3.65	1.81	3.43	1.77	4.02	1.78	4.07	1.78	A
Rented video/DVD	3.24	1.41	3.39	1.22	3.46	1.46	3.42	1.42	
Had sex	2.79	1.68	2.84	1.73	3.69	1.56	3.45	1.43	A
Woke up to alarm clock	5.72	.850	5.56	1.07	4.78	1.52	5.25	1.37	A,X
Watched morning news	2.31	1.33	2.83	1.53	2.38	1.37	2.85	1.68	A
Drank wine	2.69	1.40	2.95	1.49	3.83	1.51	3.61	1.56	A
Drank beer	3.45	1.61	3.04	1.51	4.06	1.43	3.33	1.67	A, S
Drank liquor	3.26	1.62	3.06	1.42	3.84	1.59	3.21	1.34	A, S
Sang in shower	4.97	1.58	4.90	1.35	4.33	1.71	4.67	1.56	A
Took aspirin	3.36	1.40	3.76	1.46	3.77	1.53	4.04	1.51	S
Read horoscope	2.28	1.23	3.17	1.40	2.80	1.47	3.69	1.61	A
Chewed gum	3.97	1.75	4.49	1.54	3.71	1.55	4.06	1.67	
Flossed teeth	3.10	1.57	3.87	1.58	3.91	1.66	4.24	1.49	A,S

Note: Far right-hand column indicates effect: S=main effect for sex; A=main effect for adult/ student; X = interaction. Standard Deviations included to demonstrate interindividual variability.

III. Stability of Everyday Behaviors

Because the inventory was administered as a single measure, it was necessary to examine the stability of behaviors over time. Recall the scale used ranges from within the last 24 hours to more than a month ago, thus it was necessary to test the temporal stability of behaviors over a time period greater than that questioned. To do this, a subsample (n=184) of participants completed the behavioral inventory a second time approximately 6 weeks after the initial administration. To assess the reliability of behaviors over time, we examined behaviors at the item level as well as the aggregate level with unit-weighted factor correlations. The factor level statistics are present after the factor analysis.

Item level reliability analyses:

Test-retest demonstrates remarkable stability over time at the item-level with an average intercorrelation of .58 ranging from .24 for going shopping to .87 for blow-drying hair (see Table 7). Those behaviors which resulted in lower correlations are those one might expect have a lower probability of being done everyday (re: attending a museum or art gallery). Furthermore, in testing the column vector correlations of all behaviors across time, we see this profile or pattern of behaviors is virtually identical across time with a correlation of .99. Similarly, the column vector correlation for the standard deviations, a measure of the interindividual variability for each behavior was .95. Although Epstein (1979) recommended aggregating behaviors across 10-12 days in order to achieve stable and meaningful behaviors, it seems as though the reliability over time using this much less time-intensive methodology is high enough to warrant meaning. The high degree of temporal stability is especially impressive given the breadth

of activities sampled; recall these behaviors represent the total spectrum of everyday behaviors.

Table 7
Test-Retest of Everyday Behaviors Assessed at 6-Week Follow-up

	Time 1		Time 2		t value	Inter-item Correlation (r)
	Mean	SD	Mean	SD		
Bought Groceries	4.36	1.24	4.27	1.25	.769	.42
Cooked a meal at home	4.32	1.62	4.15	1.60	1.39	.57
Did laundry	4.56	1.08	4.53	1.17	.461	.43
Vacuumed	3.29	1.28	3.38	1.40	-.801	.54
Made your bed	4.64	1.57	4.54	1.48	.904	.63
Changed your sheets	3.03	1.29	3.54	1.02	-4.75	.35
Wrote a handwritten letter	2.90	1.39	2.77	1.34	.976	.34
Balanced your checkbook	2.79	1.72	2.76	1.60	.244	.69
Made a to-do list	4.58	1.56	4.63	1.52	-.588	.69
Listened to the radio	5.08	1.42	5.28	1.24	-2.08	.54
Played a musical instrument	2.48	1.41	2.48	1.32	.065	.60
Played a board game	2.72	1.13	2.81	1.23	-.974	.44
Played cards	2.75	1.12	2.80	1.10	-.457	.40
Played a computer game	3.27	1.65	3.14	1.52	1.14	.56
Watched more than 2 hours of TV	4.35	1.48	4.24	1.46	1.09	.69
Blow-dried your hair	3.59	1.98	3.54	1.98	.319	.87
Took a bath	2.72	1.46	2.66	1.34	.436	.69
Took a shower	5.83	.590	5.81	.632	.383	.48
Used mouthwash	3.71	1.76	3.64	1.66	.589	.62
Surfed the web	5.77	.678	5.69	.798	1.64	.70
Downloaded music	3.43	1.79	3.57	1.84	-1.21	.69
Spent time with your family	4.26	1.57	4.34	1.53	-.703	.55
Went to a religious service (e.g. church, temple, synagogue)	2.61	1.19	2.77	1.33	-1.93	.65
Had an argument with a friend	3.06	1.44	2.90	1.29	1.45	.52
Hosted a party	2.41	1.11	2.37	1.05	.525	.52
Participated in an online chat	2.99	1.88	2.71	1.76	2.37	.66
Wrote in a journal or diary	2.87	1.65	2.87	1.61	.000	.62
Smoked a cigarette	2.13	1.55	2.35	1.68	-2.52	.77
Talked to your parents on the phone	5.03	1.28	4.93	1.33	1.06	.63
Went to bible or other religious group study	1.89	1.10	2.00	1.09	-1.24	.43
Did nothing (sat around, thinking, daydreaming)	4.78	1.53	4.86	1.43	-.727	.61
Went to a special interest group	2.74	1.61	2.78	1.51	-.232	.61
Attended performing arts (play, ballet, theatre, opera)	2.55	1.09	2.52	.907	.159	.50
Spent time working on a hobby (e.g. collecting, painting, making jewelry)	3.27	1.61	3.12	1.45	1.24	.58

Table 7, cont.

Talked on the phone with a friend for more than 10 minutes	4.90	1.34	4.81	1.32	.862	.59
Sought or received services from a psychologist, social worker, or psychiatrist	1.63	1.05	1.66	1.04	-.568	.55
Went to the movies	3.01	1.09	2.99	1.12	.251	.33
Went shopping (at the mall, or stand-alone stores--not for food)	3.94	1.33	3.80	1.26	1.10	.24
Shopped online	3.04	1.36	3.13	1.42	-.763	.45
Went to an alternative health care provider (chiropractor, acupuncturist, etc.)	1.57	.995	1.55	.820	.188	.58
Ate fast food	4.01	1.46	3.98	1.47	.302	.59
Went out to eat (other than fast food)	4.56	1.16	4.62	1.19	-.480	.37
Sent personal emails (not work or school related)	4.98	1.38	4.93	1.35	.594	.60
Had a facial, massage, or other spa service	1.79	.927	1.83	.980	-.606	.53
Used a tanning bed	1.52	.958	1.54	.907	-.201	.64
Spent time organizing things at home (papers, boxes, etc.)	4.28	1.42	4.13	1.36	1.27	.43
Did volunteer work	2.57	1.16	2.68	1.17	-1.41	.70
Read fiction for personal interest	3.41	1.64	3.22	1.61	1.49	.55
Read nonfiction for personal interest	3.68	1.69	3.46	1.75	1.97	.67
Played with/ took care of a dog (incl. food, exercise, clean-up)	3.28	1.85	3.35	1.90	-.509	.58
Played with/ took care of a cat (incl. food, exercise, clean-up)	2.72	1.94	2.73	1.91	-.130	.80
Went to a museum, art gallery, or exhibition	2.45	.909	2.47	.912	-.663	.55
Bought gas	3.68	1.49	3.79	1.50	-1.39	.67
Went running	2.98	1.60	3.18	1.60	-1.93	.64
Did yoga	1.94	1.29	2.03	1.25	-1.23	.72
Played billiards or pool	2.18	.851	2.17	.862	-.096	.52
Walked (for exercise)	3.62	1.77	3.57	1.70	.330	.55
Worked out in a gym	3.41	1.63	3.43	1.58	-.223	.60
Did exterior repairs (including outside clean-up)	1.93	1.04	2.30	1.32	-3.72	.47
Ate dessert	4.92	1.21	4.76	1.24	1.477	.44
Got drunk	2.95	1.57	3.00	1.54	-.507	.67
Flossed teeth	3.33	1.64	3.76	1.59	-3.55	.54
Used a Mac	3.01	1.79	3.05	1.80	-.528	.84
Used a PC	5.62	1.05	5.64	1.05	-.289	.69
Read job ads (online or in newspaper)	2.90	1.63	2.94	1.55	-.353	.50
Took vitamins	3.68	1.81	3.80	1.81	-1.12	.72
Rented a video/ DVD	3.27	1.38	3.40	1.37	-1.14	.50
Had sex	3.04	1.73	3.00	1.65	.446	.80
Woke up to an alarm clock/ clock radio	5.39	1.24	5.22	1.32	1.91	.59

Table 7, cont.

Drank wine, beer, liquor	4.15	1.67	4.16	1.63	-.097	.78
Sang in shower	4.65	1.56	4.67	1.54	-.163	.62
Aspirin	4.04	1.52	4.02	1.47	.071	.45
Horoscope	3.30	1.56	3.15	1.46	1.286	.74
Gum	4.29	1.76	4.33	1.57	-.257	.71
						Mean r = .58

IV. Factor structure of LIFE

Given the typical goals of research involving everyday behaviors, there was no research on which to base a priori theories as to how many dimensions, or which types of dimensions would emerge with behaviors at this level of specificity. Instead, I took an exploratory factor analytic approach to identify the major dimensions of everyday behaviors. Seventy-eight of the items on the LIFE were entered into the analysis. Various solutions were considered, and multiple converging criteria were relied on to determine the appropriate structure. Ultimately, the structure that appeared most sensible involved 6 factors that together accounted for 30.8 % of the variance with Eigen values ranging from 2.0 to 4.8.

Determination of the most appropriate solution was based on a number of considerations including the scree plot, maximizing factor interpretability, and minimizing cross-loadings (Zwick & Velicer, 1986; Cattell, 1966). At first, an oblique rotation was performed as one would naturally expect correlations between the behaviors of daily life; however, the correlations were low enough (mean $r = .03$) to warrant a varimax rotation which resulted in a virtually identical structure.

The varimax-rotated factor loadings are shown in Table 8. For the most part, loadings are clear and interpretable with few cross-loading behaviors, none over .39. The behaviors loading on factor 1 had a suburban or rural theme, dealing mainly with housework, cooking, cleaning, playing with a dog, and commuting. They were labeled

Suburban behaviors. The second factor was defined by intellectual, artistic, and otherwise enriching behaviors such as reading, writing in a journal, attending performing arts, not watching television, playing a musical instrument, and doing yoga. It was therefore labeled Cultured. Factor 3 was primarily characterized by computer activities: playing computer games, downloading music, chatting online, and other idle activities: “doing nothing,” eating fast food and playing cards. It was interpreted as Restorative.

The fourth factor, labeled Romantic was driven by appearance oriented activities such as blow-drying one’s hair, receiving spa services, and using a tanning bed; as well as organization behaviors and more stereotypically feminine acts such as shopping, talking on the phone, eating dessert and writing handwritten letters. Sex, drugs, and rock and roll influenced the Edgy fifth factor which contained negative loadings of going to religious services and bible study and positive loadings of smoking cigarettes and getting drunk. Interestingly, seeking psychological services and some web activities also loaded on this factor. That surfing the web and online shopping were not correlated with computer games, emailing, chatting online, or downloading music underscored the importance of including additional levels of specificity for categories defined by the ATUS. Recall that these behaviors were all derived from Computer use for leisure. The activities loading highest on the last, sixth factor were high energy behaviors such as running and working out as well as ‘go-getter’ activities such as using mouthwash, an alarm clock and hosting parties. This cluster of behaviors seems to tap into an Active lifestyle—perhaps socially and athletically.

Table 8
Factor Structure of Everyday Behaviors as Assessed by LIFE

	1	2	3	4	5	6
FACTOR 1: SUBURBAN BEHAVIORS ($\alpha = .71$)						
MADE EXTERIOR REPAIRS	.561	.201		-.124		
VACUUMED	.529			.132		
COOKED A MEAL	.520	.158	-.171		.263	-.112
PLAYED WITH A DOG	.503					
BOUGHT GAS	.494	-.175	.103		.103	.213
CHANGED SHEETS	.464	.139	-.146		.220	-.141
BOUGHT GROCERIES	.455	.121	-.221		.173	
SPENT TIME WITH FAMILY	.448					-.145
DID LAUNDRY	.440			.137		
LISTENED TO RADIO	.430		-.124	.156		.236
BALANCED CHECKBOOK	.342			.146	-.117	.109
WATCHED MORNING NEWS ON TV	.287			.275	-.101	
PLAYED WITH A CAT	.267	.147			.248	-.192
FACTOR 2: CULTURED BEHAVIORS ($\alpha = .63$)						
READ NONFICTION	.166	.527	-.173	-.122	.218	
ENGAGED IN A HOBBY	.134	.492	.311			
WROTE IN A JOURNAL OR DIARY		.474				
ATTENDED PERFORMING ARTS		.470	.105			
DID VOLUNTEER WORK		.444			-.315	
VISITED A MUSEUM		.434				
WENT TO SPECIAL INTEREST GROUP		.433	.106	.168	-.216	.151
READ FICTION	.135	.418			.303	-.122
WATCHED +2 HOURS TV	.215	-.379	.295	.156		-.121
PLAYED MUSICAL INSTRUMENT	.125	.364	.303	-.119	-.131	
WALKED FOR EXERCISE	.176	.359	-.211			.163
DID YOGA		.357	-.272	.290	.216	
SENT PERSONAL EMAILS		.340	-.158		.299	
USED A MAC	-.118	.330				-.182
VITAMINS	.228	.262	-.240			.209
USED A PC		-.214				.165
FACTOR 3: RESTORATIVE BEHAVIORS ($\alpha = .54$)						
PLAYED COMPUTER GAME			.508	-.104		-.171
DOWNLOADED MUSIC	-.175		.474			.146
PLAYED BILLIARDS			.467			.192
PLAYED CARDS	.226		.457			.154
ATE FAST FOOD		-.394	.455	.123		

Table 8, cont.

PARTICIPATED IN ONLINE CHAT			.419		
DID NOTHING	-.152		.350		.104
PLAYED BOARD GAME	.212	.241	.334		
HAD ARGUMENT W/ FRIEND	-.146		.330	.128	
FACTOR 4: ROMANTIC BEHAVIORS ($\alpha = .61$)					
BLOW-DRIED HAIR		-.176	-.138	.610	-.116
RECEIVED SPA SERVICE				.494	.206
USED TANNING BED	.153	-.115	.127	.458	.236
WENT SHOPPING	.157		.110	.432	-.163
TOOK A BATH	.101			.406	-.238
TALKED OPHONE +10 MINUTES				.401	.194
MADE TO-DO LIST		.184	-.157	.349	-.139
SPENT TIME ORGANIZING	.207	.146		.321	.152
TALKED TO PARENTS	-.108	-.182	.207	.320	.149
MADE BED	.195		-.179	.320	-.129
ATE DESSERT				.309	-.179
WROTE HANDWRITTEN LETTER		.301	-.165	.301	
WENT TO ALTERNATIVE HEALTH CARE PROVIDER		.254		.279	.237
WENT TO MOVIES			.110	.251	
WENT OUT TO EAT			.139	.189	.149
					.166
FACTOR 5: EDGY BEHAVIORS ($\alpha = .53$)					
ATTENDED RELIGIOUS SERVICE			.175	.171	-.640
WENT TO BIBLE STUDY	.127		.179	.135	-.597
HAD SEX	.199				.469
SMOKED CIGARETTE			.303		.435
GOT DRUNK	-.101		.287		.427
RECEIVED PSYCHOLOGICAL SERVICES		.243		.194	.317
SURFED THE WEB			.210	-.131	.290
RENTED DVD OR VIDEO	.184		.111	.146	.255
SEARCHED JOB ADS	.213		.122	.126	.255
SHOPPED ONLINE				.128	.203
FACTOR 6: ACTIVE BEHAVIORS ($\alpha = .48$)					
WENT RUNNING		.165			.687
WORKED OUT IN A GYM			-.104		.665
TOOK SHOWER		-.132			.391
HOSTED PARTY	.260	.167	.159		.125
WOKE UP TO ALARM CLOCK	-.131	-.122	.141	.100	.243
USED MOUTHWASH	.160	-.109			.172

V. Scale Level Analyses

Is the factor structure generalizable across time?

To determine the test-retest of behaviors at the factor level, I computed unit weighted scales for each of the 6 factors. Using the subsample of 184 participants who completed the inventory at Time 1 and Time 2, I computed the simple correlation between each pair of corresponding factors across time. The congruence coefficients across factors were .70 for the Suburban Factor, .77 for Cultured, .69 for Restorative, .73 for Romantic, .80 for Edgy, and .62 for Active. The average correlation between factors of .72 suggests that, indeed, the structure of everyday behaviors is stable across time.

Does week vs. weekend play a role?

Day of week also seems to have an effect on behaviors at the scale level, such that participants report doing more Suburban $F(1,688) = 27.8, p < .01$ and Edgy $F(1,688) = 13.2, p < .01$ behaviors on the weekend, and more Active $F(1,688) = 20.0, p < .01$ and Restorative $F(1,688) = 15.3$ behaviors during the week. Surprisingly both Cultured behaviors such as reading, working on hobbies, and doing volunteer work, and Romantic behaviors, such as taking baths, going to the movies, and going shopping are unaffected by day of week (weekday vs. weekend).

Recall that for students, at the item-level, weekends played a more significant role in differentiating time use. Controlling for whether or not participants were students, the difference between weekend and weekday behaviors only remain for Suburban behaviors. That is, all participants appear to do more household chores on the weekends

($r = .10$, $p = .01$). The distinct weekend life of students appeared to be driving the differences described above.

Are there individual difference at the scale level: Sex and Age

As the item-level statistics hinted, sex and age accounted for a large amount of variance in behaviors at the scale level (see Table 9). Specifically, the Romantic, Restorative, and Active factors showed a clear relationship with sex such that females report engaging in Romantic behavior more recently ($r = .61$, $p < .01$) and Males, more Restorative ($r = .24$, $p < .01$) and active behaviors ($r = .09$, $p < .01$). Even stronger were the effects for age, such that each of the 6 factors was significantly correlated with age: younger participants reported more recently doing Restorative, Romantic, and Active behaviors, whereas older participants reported more recently engaging in suburban, Cultured, and Edgy behaviors.

Because of the number and strength of significant correlations with age and sex, a further analysis was performed to remove the effects of those variables. Specifically, I removed the effects of sex and age by simultaneously entering both variables into a regression across each behavior. I then performed a factor analysis on the residuals of each behavior with age and sex removed.

Table 9
Correlations of LIFE Scales with Age, Sex, and Day of Week

	Suburban	Cultured	Restor- ative	Romantic	Edgy	Active
AGE	.36**	.17**	-.42**	-.12**	.11**	-.20**
SEX	-.06	-.02	-.24**	.61**	-.05	-.09*
WEEKEND	.20**	.05	-.15**	.07	.14**	-.17**

**p<.01

Note: Female = 2; Weekend = 1

What is the structure of everyday behaviors without the influence of age and sex?

Using the residualized behaviors, a 5-factor structure became more sensible. Again, multiple structures were considered using various rotations. The 6-factor structure was rejected because it produced a trivial fifth factor comprised only of religious behaviors (religious services and bible study). These items were rationally related, however, the five factor structure was more easily interpretable. The main difference between the residualized factor structure and the previous one is the removal of the predominantly female, or “romantic” factor. The other factors remained relatively unchanged, with the exception of a small amount of shifting of single item behaviors which, in fact, made factors increasingly coherent. To illustrate, “went to an alternative health care provider” moved from the Romantic factor to the Cultured factor; Watching the morning news moved from the Suburban factor to the Active factor. The varimax rotated structure is reported in Table10 along with the reliabilities of each scale.

Table 10
Five-Factor Structure of Residualized LIFE Behaviors

	1	2	3	4	5
Factor 1: Cultured ($\alpha=.71$)					
READ NONFICTION	.503	.108	-.221	.122	
DID YOGA	.474			.219	
ATTENDED SPECIAL INTEREST GROUP	.439			-.253	.165
WROTE IN JOURNAL/ DIARY	.426		-.220		.165
ATTENDED MUSEUM	.408				.103
ATE FAST FOOD	-.407		.176		.276
WATCHED 2+ HOURS TV	-.401	.195	.191		.267
WALKED FOR EXERCISE	.399		.131		
ATTENDED PERFORMING ARTS	.394			-.120	.231
WORKED ON HOBBY	.373	.168	-.257		.334
READ FICTION	.358	.123	-.223	.232	.161
SENT PERSONAL EMAILS	.356			.226	
WROTE HANDWRITTEN LETTER	.356	.102			
MADE TO-DO LIST	.319	.171	.187	-.137	-.125
TOOK VITAMINS	.318		.177		-.106
WENT TO ALTERNATIVE HEALTH CARE PROVIDER	.283			.187	.173
FACTOR 2: SUBURBAN ($\alpha=.67$)					
VACUUMED		.552			
COOKED MEAL	.109	.541	-.173	.212	
DID EXTERIOR REPAIRS	.140	.507			.106
DID LAUNDRY		.495			
BOUGHT GROCERIES	.122	.494		.113	-.148
CHANGED SHEETS	.101	.477		.146	
PLAYED WITH DOG		.455			
BOUGHT GAS	-.112	.432	.337		
SPENT TIME WITH FAMILY		.396		-.156	
LISTENED TO RADIO		.356	.337		
BALANCED CHECKBOOK		.296	.200	-.142	
SPENT TIME ORGANIZING	.230	.295	.171		
WENT SHOPPING		.285			.167
MADE BED	.141	.271	.126	-.161	-.117
SEARCHED JOB ADS		.251	-.105	.213	.216
TALKED TO PARENTS		.212	.119		
SHOPPED ONLINE		.143		.137	
FACTOR 3: ACTIVE ($\alpha=.53$)					
WORKED OUT IN GYM	.297		.530		-.223
USED TANNING BED		.163	.461		.225
WENT RUNNING	.418		.450		-.155
BLOW DRIED HAIR	-.118		.449	-.102	

Table 10, cont.

USED A MAC	.257		-.317		
WATCHED MORNING NEWS ON TV		.228	.287	-.118	.128
TOOK SHOWER			.270		
USED A PC	-.129		.268		
RECEIVED SPA SERVICE	.191		.262	.180	.184
TALKED ON PHONE +10 MINS	.207		.261		
HOSTED PARTY	.205	.181	.256		.182
WENT OUT TO EAT	.102		.245	.117	.164
USED MOUTHWASH		.216	.224		
WOKE UP TO ALARM CLOCK			.217		
FACTOR 4: EDGY ($\alpha=.70$)					
ATTENDED RELIGIOUS SERVICE			.172	-.656	.163
WENT TO BIBLE STUDY			.157	-.604	.174
GOT DRUNK			.324	.484	.211
HAD SEX		.213		.443	
SMOKED CIGARETTE				.425	.372
DI D VOLUNTEER WORK	.374			-.385	.171
SOUGHT PSYCHOLOGICAL SERVICES	.218			.261	.235
SURFED WEB			-.172	.253	.142
RENTED DVD/ VIDEO		.222		.233	.137
ATE DESSERT				-.181	
FACTOR 5: RESTORATIVE ($\alpha=.41$)					
PLAYED COMPUTER GAME	-.217		-.104		.511
PLAYED CARDS		.162	.160	-.100	.438
PLAYED BILLIARDS			.167		.418
PLAYED BOARD GAME	.124	.143		-.123	.406
DID NOTHING					.311
PLAYED MUSICAL INSTRUMENT	.234	.128	-.215	-.183	.275
HAD ARGUMENT W/ FRIEND					.246
PLAYED WITH CAT		.195	-.166	.197	.231
CHATTED ONLINE	-.112				.228
DOWNLOADED MUSIC					.222
TOOK BATH		.182			.191
WENT TO MOVIES	.116		.111		.173

VI. Personality and Everyday Behavior

More extraverted individuals have been shown to seek out interaction partners that validate their Extraversion (Swann & Hill, 1982); people high on Openness create stylish, distinctive, and unconventional living spaces (Gosling, Ko, Manarelli, & Morris, 2002). Do individuals' everyday behaviors reflect certain aspects of their personality, as traditionally measured?

Table 11 reveals that, indeed, certain aspects of the Big Five are related to everyday behaviors. Specifically, each factor of personality demonstrated a unique profile of behavioral patterns. For example, people who rate themselves as more Conscientious, engage in more Suburban activities (e.g. cleaning, organizing), fewer Restorative activities (e.g. computer games, fast food), fewer Edgy behaviors (e.g. drinking, smoking) and more active behaviors (running, waking up to an alarm clock). More extraverted people engage in more Active, Romantic, and Suburban activities. The patterns of correlations such as those between Openness and Cultured activities ($r=.42$); Extraversion and Active ($r=.25$) Emotional stability and Romantic activities ($r=-.16$), to some extent can be interpreted as convergent validity. It is clear from the other patterns of correlations that these behavioral factors are not merely tapping into the same domain as the personality dispositions.

Because of the pronounced sex differences in both personality and behaviors, partial correlations were performed at the scale level and are presented in the lower half of Table 11. Despite the influence of sex on personality and behaviors independently, their patterns of relationships are virtually unchanged when controlling for sex. The only

difference to emerge is on the Romantic behaviors, where there is no longer a significant relationship with Emotional Stability and Openness.

Table 11
Interrelations of Behavioral Factors with Big Five Factors of Personality

	Suburban	Cultured	Restor- ative	Romantic	Edgy	Active
EXTRAVERSION	.09*	.04	-.04	.12**	-.04	.25**
AGREEABLENESS	.05	.01	-.11**	.00	-.14**	.05
CONSCIENTIOUSNESS	.12**	.01	-.17**	.07	-.11**	.09**
EMOTIONAL STABILITY	.17**	.15**	.03	-.16**	-.05	.12**
OPENNESS	.11**	.42**	-.10*	-.12**	.12**	-.09
<u>PARTIAL</u>						
<u>CORRELATIONS</u>						
<u>(SEX)</u>						
EXTRAVERSION	.09*	.04	-.03	.14**	.04	.26**
AGREEABLENESS	.04	.01	-.10**	-.05	-.14**	.06
CONSCIENTIOUSNESS	.11**	.02	-.15**	.00	-.11**	.10**
EMOTIONAL STABILITY	.19**	.16**	-.05	.03	-.07	.10**
OPENNESS	.11**	.42**	-.12**	-.08	.08**	-.10**

*p<.05, **p<.01

To test the generalizability of these correlations across students and adults, I computed the column vector correlations for each 6 behavioral factors for both students and adults, transformed the correlations using Fisher's r-to-z- formula and subsequently compared the correlations. The only behavior-personality pattern that did not converge between students' and adults' was for the Suburban factor ($r=.12, 0>.05$).

Item-level Analyses of Behavior with Broad Personality Factors

At the item level, a series of interesting patterns emerged. Several behaviors showed modest correlations to expected personality traits. For example, two of the highest

behavioral correlates of Extraversion were talking on the phone for more than 10 minutes ($r=.23$, $p<.01$) and hosting a party ($r=.19$, $p<.01$). Two of the highest behavioral correlates of Openness were reading nonfiction ($r=.26$, $p<.01$) and attending performing arts ($r=.24$, $p<.01$). Additional item-level findings are presented in Table 12. Considering Kenny’s (1994) argument for behaviors as the gold standard of accurate personality criterion, and the difficulty with which single behaviors are predicted (Wu & Clarke, 2003), the magnitude of the correlations with these single, naturalistic behaviors is encouraging.

Table 12
Correlations Between Personality Scales and 3 Most Highly Correlated Behavioral Items (with/ age and sex removed)

	Extraversion	Agreeableness	Conscientious-ness	Emotional Stability	Openness
Talked on the phone for more than 10 minutes	.23				
Worked out	.22				
Hosted a party	.19				
Attended Religious Service		.11			
Made bed		.11			
Hosted party		.10			
Balanced Checkbook			.21		
Made bed			.16		
Made to-do-list			.15		
Worked on a Hobby				.16	
Did Volunteer work				.13	
Worked out at a gym				.13	
Read nonfiction					.26
Attended performing arts					.24
Wrote in a journal or diary					.23

All $p<.01$

VII. Construct Validity Through Linguistic Content

Are the behavioral dimensions construct valid?

An instrumental scale derives its validity based on consensus in external classification. For example, ideally, a scale that measures sociability would identify people who are described by others as outgoing, friendly and gregarious and engage in activities consensually classified as sociable (Buss & Craik, 1985). One traditional way to obtain external classification is by others' (peers', or other informants') reports on the same questionnaires (c.f. Vazire, in press), or naturalistic observations in relevant contexts. As mentioned in the introduction, Paunonen (2003) has demonstrated high validity estimates for behaviors using peer reports (i.e. mean convergence of self-peer ratings on 39 behaviors across domains = .52). Naturalistic observation, in this case, would entail vast amounts of time and labor in order to follow around participants for an entire day or more.

As a new, alternate method of assessing convergent validity, the content of participants' descriptions of their weekend activities was analyzed to assess whether people write about doing the same things on the weekends that they report during the week (as assessed by the questionnaire). (Note: for the following analyses, only people who filled out the survey on a weekday were used; n=478). Specifically, through a factor analysis of content words, the qualitative distinctions in descriptions of weekends were interpreted by analyzing the interrelations of words.

After completing the behavioral inventory and receiving a short break, participants were directed to a website with the following directions:

For the next 10 minutes, your task is to simply write about your weekend activities. That is, describe your Saturdays and Sundays from the time you wake up until the time you go to sleep. What do you usually do? How do you spend your free time? Do you have a routine?

If you don't have a "typical weekend," describe what you did last weekend, or what you plan to do next weekend.

Essays ranged from 29 to 1,122 words (mean = 210.6, SD=141.1). Participants discussed their weekend activities at a level, seemingly primed by the level of analysis requested in the first segment of the questionnaire. That is, participants discussed their day to day at a microscopic level (see Appendix C) that provided the perfect basis for a manipulation check.

A dictionary was created to assess the content of participants' weekend descriptions. Because the majority of words used to describe weekends included function words (e.g., pronouns, prepositions, articles-- "I" used 6,984 times; "to"=5,474 times; "and"=5,705 times) without information relevant to an analysis of content, the texts were first processed through Wordsmith, a word frequency counting program. All words used were sorted alphabetically, and all function words (articles, prepositions, conjunctions, and pronouns) were eliminated. In addition, all words used less than 15 times were discarded.

When appropriate, words were combined into categories that included forms of similar words (i.e plurals, verb forms, etc.). To illustrate, sleep and sleeps were combined, but not check and checking. Ultimately, 309 categories were created and used as a dictionary in the Linguistic Inquiry and Word Count text analysis program (LIWC; Pennebaker, Francis, & Booth, 2001). LIWC is a probabilistic text analysis program that detects the percentage of occurrence of each word in each individual text. After the texts

were individually processed through LIWC, they were merged with the existing data on behaviors and personality.

Originally, all 309 linguistic variables were entered into a Principal Axis Factor analysis. Although intuitive for a factor analysis of words to use an oblique rotation, the correlations among the factors using an oblimin rotation were uncorrelated or low enough to warrant a varimax rotation. Thus, a principal axis factor analysis with varimax rotation was performed. Various solutions considered before further consolidating various categories of words (re: football, basketball, baseball = sports). When conceptually similar items repeatedly loaded on different factors, they were not combined (e.g. golf and yoga were not included in the sports category). Ultimately, a 7-factor solution was selected that accounted for 11.0% of the total variance. Factor loadings are detailed in Table 13.

Table 13
Rotated Varimax Factor Loadings of Weekend Descriptors

	1	2	3	4	5	6	7
	FACTOR 1: LAID BACK						
NEWS	.612						
MILES	.607				-.158		
WIFE	.600						
READ	.505	.418	.150				
BREAKFAST	.505			.171	.150	.202	
BOOK	.493						.176
COFFEE	.462						
DINNER	.453			.185		.269	.161
AFTERNOON	.421	-.115					
HELP	.407						
COOK	.374	.145					
CARE	.359		.133				
LOOK	.357					-.101	
EMAIL	.259	.225		.192	.151	-.119	
CHILD	.217						

Table 13, cont.

SON		.197				.175
OFFICE		.181	.134			
ANSWER		.168	.131	.133		
EVENING		.162				
HOMETOWN		-.158				
DORM		-.139		.128		
TIMES		.125	.100			
FICTION		.121	.119			.109
CONVERSATION		.119				
WINE		.116				
DVD		.107				
ROOMMATE		-.105				
FACTOR 2: ZEN						
SURF		.519		.130	.134	
POT	-.122	.515			-.115	
WEB		.468				
YOGA		.445				.130
LISTEN		.444				.111
PHONES		.437				.106
FIX		.434				
MUSIC		.422				
MUSEUM		.410			-.151	
MONEY		.397			-.127	
VISIT		.394	.211	-.109	-.227	-.100
CITY		.378				
SMOKE		.374				.113
BRUNCH		.343			-.101	
WRITE	.164	.305	.185		-.158	-.121
NET	.137	.292		.127	.165	
BROTHER	-.150	.280				
CARD		.269			.139	
PAPER	.135	.249		-.136		.103
CAT		.242	.157		.163	
SHOP	.110	.233	.213		.181	
SEXWRD		.211				
THEATER		.211				.106
ONLINE		.191		.154	.118	
FILM		.173				
MAGAZINE		.170				
MEDITAT		.158				
CENTRAL		.154				
VOLUNTEER		.154				
CIGAR		.147				
TEACH		.142				
FACTOR 3: ERRANDS						
WASH	-.119	-.108	.773		.157	
CLOTH	-.114		.712	.137		
CLEAN			.704	-.111		.181
ERRANDS			.588		-.304	
SERVICE		-.121	.567	.145	-.113	

Table 13, cont.

HOUSE			.541	-.140		.126	.132
RUN	.236		.526		-.313		-.112
VACUUM	-.129		.415		.166		
MOVIE	.229		.409		-.293		
FOOD	-.124		.316		.160		
CHURCH		-.203	.302	.229	-.101		-.112
LAUNDRY		.104	.284			.171	
DOG			.274		.165		
GROCERY			.253				
EXCRZ	.112	.154	.221		-.203		
CAR			.160		.122		
LEFTOVER		.105	.149	.117	.115		-.132
MOTHER			.140				
LIST			.124				
HOURS			-.109				
FACTOR 4: ROUTINE							
BRUSH			.488			-.106	-.144
TEETH			.482			-.109	-.144
EAT			.442				
WAKE		-.182	-.120	.441		.319	
SHOWER				.431	.221		
WEEKEND	-.237			-.382	-.154		
WATCH			.236	.312		.230	-.107
TIMEW				-.309			-.134
DOWNLOAD		.105		.306			
FAMILY		.130		-.299		.157	
SPEND				-.292			-.135
SUMMER	.105			-.287			
BEACH				-.275			
HOME	.193			.273			
GAME		-.114		.272			
WINTER	.113			-.263			
ACTIVITY				-.256			
PIZZA				.239			
BIKE	.115			-.232			
CHAT				.226			
PROJECT				-.218			-.107
OUTSIDE				-.209			
YARD	.109			-.201			.163
CATCH				-.193	-.100	.108	
NOON				.193			
FACE		.120	.132	.190		-.151	
COMPUTER	.170			.187	.117		
LOVE				-.182			
TRAVEL				-.174			
ORDER				.172			
WALK		.117		-.169			
SLEEPWRD	-.112		.109	.157		.143	
SPORTS		-.125		.154			
REST	.100			.153			

Table 13, cont.

HIKE				-.143		.116	
HOUSEWORK				-.139			
HAIR				.137	.105		
WEATHER				-.135			
MIDNIGHT				.126			
BOYFRIEND				.125			
WEDDING				-.122			
SCHEDULE				-.121			
TOWN				-.117			
LIVE				-.117			
FACTOR 5: HOUSE							
BATH						.510	
BABY						.503	
KITCHEN			.104			.469	
DRESSED				.100		.444	
LIVING						.444	
TEA						.379	
NIGHT						-.346	-.105
FRIEND			.331	.139		-.335	
FRIDAY	-.159					-.310	-.159 .134
SATRDAY	.239					-.303	
BED	.157				.281	.290	.192
SUNDAY	.249					-.277	-.148
WORK	.123					-.241	
KID	.231					.233	
PARTY	-.149					-.226	-.106 .130
ROOM					.190	.223	
PARK	.214					.217	.111
BUY						.192	
FEED	.106					.183	-.107
PLAY						.166	
STREET	-.111					-.164	-.117 .134
STORE						.162	
HANG	-.138					-.152	.139
SNACK	.149					.151	
WEEK						-.149	-.127
STRAIGHTEN						.146	
MEAL						.146	
YEAR						.141	
CHICKEN						.135	
PANCAKES						.127	
FACTOR 6: CHORES							
MOVE						.755	
PACK						.697	
ORGANIZE	-.136					.669	
CHORES						.583	
CEREAL						.577	

Table 13, cont.

BILLS		.113				.466
PAY		.129				.442
TV			.254	.285		.398
LUNCH	.219	-.153		.298		.352
PLAN				-.142	.115	.220
RELAX		.171				.176
WATER		.100	.170	.151	.130	-.171
FACTOR 7: PARTY						
DRINKS					-.119	.886
DRINK					-.108	.870
BAR					-.129	.684
BAND						.145
BEER						.428
POOL	.180			-.125		.129
DRUNK	-.159				-.109	-.121
TALK		.189		.117	.111	.280
BUSINESS	.164					.237
PARENTS						.216
MEET						.207
DATING					-.143	-.122
COUCH					.106	.197
BOTTLE					.115	.192
ALCOHOL						.190
GUY	-.102				-.166	-.139
GIRL					-.117	-.124
MARDI	-.102					.159
SISTER						.132
HANGOVER						.119
MARRIED						.110

Identifying the structure of weekends as a multidimensional space is an interesting task in and of itself. The ways that words cluster together in describing weekend behaviors are surprisingly intuitive. Words that alone have ambiguous meanings are made sensible with other words loading on that factor. For example, watch and television, spend and time, web and surf.

Immediately, the first factor comes across similar to the Cultured factor including words such as brunch, yoga, music, museum, relax, smoke, pot, and money. These words are alike in the theme of relaxation and culture and have a more spiritual tone to them.

They were labeled the Zen dimension of words. The second factor includes words related to getting things done on the weekends: washing, cleaning, vacuuming, running errands, groceries, and laundry. At first glance, these words seem most relevant to the Suburban factor of activities. It was labeled Errands.

The third factor includes words such as breakfast, read, dinner, wife, news, book, wine and coffee. These words have a laid-back quality to them as well as an intellectual tone and were therefore labeled as such. The fourth factor includes words like packing, organizing, chores, paying bills, and planning, and tasks. It is similar to the second factor in its task-oriented nature, but lacks the suburban quality. Other words with slightly lower loadings include restaurant, neighborhood, bank, and lounge, which lead to the conclusion that these are the words of a city dweller. The fourth factor was labeled: Chores.

The fifth factor includes various rooms and locations: kitchen, living, bath, bed, (room), mall, and park, but is defined by its highest loadings, dressed and baby. Most likely these are words resembling staying around the house on weekends; but in a more passive way, unrelated to doing tasks, errands, or chores around the house. It is labeled as the House factor. The sixth factor was easily interpreted as party words: dating, party, drunk, Saturday, night, alcohol, guy and girl. Interestingly, words loading negatively on this factor are fiction, feed, cat, and meal. This dichotomy is interesting in that the factor seems to represent either going out and drinking, or staying in and reading. Lastly, the seventh factor was labeled a routine factor resembling the mindless tasks and routine behaviors one does on a typical weekend. Words loading high on this factor included

face, teeth, brush, shower, water, and leftover. This factor was also characterized by words resembling the Restorative factor such as download, chat, watch and game.

The correlation matrix of behavioral scales and words is presented in Table 14. As would be expected, people who report doing more Suburban behaviors during the week describe doing errands on the weekend, such as washing clothes, cleaning the house, and vacuuming ($r=.13$, $p<.01$). People who report having done Cultural activities, talk about yoga, going to museums, having brunch in a Zen language ($r=.17$, $p<.01$) and, indeed also do laid-back activities on the weekends such as reading books, drinking coffee, and having wine with dinner ($r=.13$, $p<.01$). Those reporting Restorative behaviors do not run errands ($r=-.12$, $p<.01$) or talk about leisurely weekends drinking coffee or wine ($r=-.19$, $p<.01$). Instead, their weekends are characterized by a lack of routine ($r=-.22$, $p<.01$)— a highly negative correlation with words associated with their weekly behaviors (i.e., download, chat, etc.) and a lack of staying around the house ($r=-.18$, $p<.01$). Restorative behaviors seem to include weekends comprised of going downtown, drinking, getting drunk, partying and apparently staying up well past “midnight” ($r=.15$, $p<.01$).

The language associated with Edgy behaviors was, not surprisingly, most highly characterized by party words ($r=.23$, $p<.01$). Similarly, these behaviors are related to weekends described by Zen words ($r=.17$, $p<.01$), that do not involve routine behaviors ($r=-.19$, $p<.01$). Active behaviors are associated with, evidently active weekends neither spent at the house ($r=-.24$, $p<.01$), nor laidback ($r=-.10$, $p<.01$). Active weekly behaviors seem to be associated with an active social life on the weekends ($r=.13$, $p<.01$). Recall,

having recently hosted a party was one of the higher loading behavioral items on the active factor. Because the Active behaviors were primarily characterized by exercise and athletically active behaviors, item-level correlations were performed with words such as workout ($r=.17, p<.01$), gym ($.26, p<.01$), and sports ($.10, p<.01$), which demonstrated the expected relationships.

Romantic behaviors were related to Zen and Errand words ($r_s=.08, p<.05$), and not laid back language ($r=.16, p<.01$). While this is reasonable given some of the behaviors characterizing the Romantic factor (making to-do-lists, spending time organizing, shopping), the general expected language of a weekend associated with the majority of Romantic behaviors (blow-drying hair, receiving spa services, using tanning bed, shopping, etc.) was difficult to determine. Thus, a few words hypothesized to be in related weekend descriptions were examined on the item-level. As would be expected, from its elimination after removing the influence of sex, Romantic behaviors were significantly related to the words: boyfriend ($r=.21, p<.01$) and date ($r=.09, p<.05$).

Partial correlations controlling for age and sex were also performed and are displayed in the lower portion of Table 14. With few exceptions, the expected correlations are maintained. Independent of sex and age, Suburban behaviors are still related to errands, chores, and house language ($r_s=.08, .13, .10$, respectively); Cultured behaviors with Zen ($r=.11$); Edgy behaviors with party words ($r=.26$); and Active behaviors, negatively related to house words ($r=.18$). Of notable difference are the reversed relations of Restorative behaviors and Routine language (from $r=-.22$ to $r=.09$) and Active behaviors with party language (from $r=.13$ to $r=-.10$). The correlations of the

residualized factor score for Restorative Behaviors with Routine language is positive, although nonsignificant ($r=.06$), leading to the conclusion that it is the influence of age on this aspect of language driving the original negative correlation ($r_{\text{routine} \times \text{age}} = -.31$, $p<.01$).

Although at face value these correlations with linguistic variables are modest, their statistical significance is impressive given the vast spectrum of words in the lexicon. To be able to detect parallels between the content of participants' brief, 200-word descriptions of routine weekend behaviors and their pattern of activity as reported on a short self-report inventory is supportive of the validity of this method of assessment. That the behavioral signatures of one's weekend mirror his/her weekday behaviors speaks to the consistent, stable nature of our everyday behaviors. That we do the same things, day-in and day-out, regardless of the constraints imposed on our schedule is a strong indication that our behaviors can be thought of as an enduring signature.

Table 14

Correlations of Linguistic Factors with Behavioral Scales With and Without Controlling for Sex and Age

	RESTORATIV					
	SUBURBAN	CULTURED	E	ROMANTIC	EDGY	ACTIVE
LAIDBACK	.19**	.12**	-.24**	-.08**	.03	-.04
ZEN	.04	.15**	-.12**	-.03	.12**	-.08*
ERRANDS	.15**	-.04	-.14**	.05	-.04	-.06
ROUTINE	-.23**	-.20**	.23**	-.02	-.14**	.02
HOUSE	.18**	-.01	-.13**	-.03	-.06	-.13**
CHORES	.10**	-.05	-.02	.07	.03	-.05
PARTY	.01	-.03	.09**	-.01	.27**	.03
PARTIAL						
(AGE, SEX)						
ZEN	-.09*	.11**	-.01		.13**	-.06
ERRANDS	.08*	-.10**	-.03		-.01	-.00
LAIDBACK	.04	.06	-.07		.05	-.03
CHORES	.13**	-.10**	-.02		.06	-.03
HOUSE	.10**	-.05	-.06		-.03	-.18**
PARTY	-.03	-.03	.10**		.26**	-.10**
ROUTINE	-.09*	-.16*	.09*		-.14	-.08*

* p<.05, **p<.01

GENERAL DISCUSSION

The goal of this dissertation was to introduce a new tool for assessing personality based on everyday behaviors. In Study 1, an adequate sampling of the behavioral landscape was ensured by identifying the major clusters of behavior from the American Time Use Study. By relying on this comprehensive nationwide dataset, many of the subjective biases constraining the initial stage of the research were eliminated. After a first pass at narrowing the scope of behaviors, an inventory of items was tailored to a level of specificity using various criteria informed by a body of research more relevant to the particular aims of this project. Namely, more specific, objective, everyday behaviors that were of psychological interest were derived and additional items previously documented as critical links in the study of personality and behavior were incorporated.

In Study 2, a descriptive account of the behavioral life of a large, diverse sample was presented and six major dimensions of behaviors were identified. These six dimensions of behavior were internally consistent, stable across time, and for adults, highly similar on weekdays and weekends. The large sex and age differences that emerged raise interesting implications concerning the development and maintenance of behavioral patterns to be addressed in future research. The role of biology, role shifts and expectations, and other environmental factors in shaping our everyday life is a necessary path for this research to follow.

After establishing the reliability of everyday behaviors over time and the generalizability of the structure of daily life across student and adult samples, I examined the relation of everyday behaviors to individual differences in age, sex, and personality.

Each behavioral dimension demonstrated unique associations to broad levels of personality. Individual differences in personality may play a role in shaping behaviors. However, the direction of this relationship is not entirely clear. Measuring everyday behaviors offers researchers a way to derive personality dimensions directly from observable behaviors of daily life, with no reason to infer personality from trait measures, nor subsequently predict behaviors from these inferred measures. As Buss and Craik (1983) suggest in their Act Frequency research, modal tendencies in everyday behavior need not be considered manifestations of personality, but personality per se.

Lastly, I offered an alternate method to assess the construct validity of self-reports of behaviors by analyzing the open-ended descriptions of a different aspect of participants' daily life. Indeed, participants who reported performing behaviors on a given dimension during the week wrote about routinely doing them on the weekends as well. A natural extension of this line of research would be to assess the concomitant stylistic aspects of language and evaluate individual differences as a function of everyday behaviors. That is, are these different behavioral approaches to everyday life reflected in the patterns of thinking and psychological orientation that are obtained through analysis of linguistic style? Similarly Mehl (2004) proposes using unobtrusive recordings of naturalistic language and the surrounding sounds of social life to empirically cluster people on behavioral and environmental personality indices. A simple inventory such as this one could accomplish this task more efficiently with less respondent burden.

This dissertation began with the proposal that understanding individuals based on the ordinary conduct of everyday life implicitly incorporates their values, attitudes and means of expression. With a rigorously derived method of capturing the broad landscape

of everyday life and an empirical test of its effectiveness, I have demonstrated that dimensions of everyday behaviors are internally consistent, reliable over time, construct valid, and reflective of different information from the traditional trait approach.

Limitations

The inventory and method by which I obtained these results are not without shortcomings. First, the collection of data is largely an artifact of this cultural moment. Although I obtained a reasonably geographically diverse sample, these behaviors are most likely not generalizable to another culture, or even time. With rapidly advancing technology, the behavioral landscape shifts in tandem. The mean difference of email usage in the student and adult populations is a prime example of this. As recently as 5 years ago, email was the forefront of communication, avidly used by the student population. In this study, the average student reported sending personal emails “2-3 days ago,” ($M= 4.6, SD=1.4$) whereas adults reported having done so “within the last 24 hours.” ($M=5.6, SD=.93$). Students instead, are now communicating by cell phone and Instant Messenger, a method that will most likely change within the next year or so.

Although more objective than a traditional self-report measure of personality, there are still significant aspects of the behavioral landscape that are not assessed by this tool—both in terms of level of detail (i.e. more specific aspects of shopping), and entire aspects of behavior untapped (i.e. work-related activity). Like any event-recording or time-budget study, collecting information on private, socially undesirably, or deviant behaviors is subject to inaccurate representation and under-reporting (Robinson &

Godbey, 1999). This was clearly a shortcoming of the current inventory as private behaviors, for one category, comprise a significant portion of daily life.

This dissertation explored *basic* individual differences in everyday behaviors, a more detailed analysis of individual differences on particular subsets of behavior would undoubtedly be useful. For example, does gender only play a role on behaviors that are enacted on an individual basis; does age only affect “responsible” behaviors? One way to approach this issue would be an exploration of why various behaviors cluster together. After rating each behavior on various attributes, the effect of sex, education, income, geography, or perhaps even individual differences in possessions of technology (i.e. internet access) would further delineate idiosyncratic experiences of daily life. One of the major findings of the 1965-1966 national time-use study was the overwhelming impact that ownership of a television set had on how time is spent (Robinson & Godbey, 1999). Undoubtedly there are analogies to similar cultural artifacts today.

Criticisms can also be raised with respect to the analyses performed in the current project. That is, would cluster analysis, a method of creating behavioral “types” be more suitable than the factor analytic strategies utilized? Despite the intuitive appeal of categorizing people, typologies are generally not favored in personality psychology (McCrae & Costa, 1989; Mendelsohn, Weiss, & Feimer, 1982; Rotter, 1975). Theoretically, before creating types one must first establish that the variables on which membership is based, (i.e. behavioral factors), are discontinuous (Mendelsohn et al., 1982). Thus to warrant their creation, one must have a more in-depth understanding of the distribution of behavioral dimensions (i.e. are they bimodal?) and the factors which moderate and predict their occurrence over time. Again, the behavioral dimensions

identified in this project were meant to be a first step in mapping and narrowing down the vast spectrum of everyday behaviors to a critical set worthy of further study (c.f. Stewart, 1981). A subsequent taxonomy is certainly a logical implication for future research.

Implications

What are the implications of understanding an individual based on his/her behaviors? To understand someone based on behaviors, and moreover to understand ourselves by examining our behaviors is a central tenet in the tradition of attribution in social psychology. Self-perception theory (Bem, 1967) was introduced as a way to understand the process of self-knowledge acquisition. Bem proposed that in the same way that we infer others' feelings, actions, and intentions from their behavior, so do we our own. One might begin by asking, am I an environmentalist? Then the process of reviewing recent behaviors ensues: 'Let's see, I woke up in my solar-powered house and went to the compost, as I do every week; I used a recycled coffee cup at breakfast; I led a rally against fuel-emission standards last night; I must like the environment, I must be an environmentalist.' In this fashion, from observing our own behaviors, we come to know ourselves and our preferences. Bem's theory further suggests that this is more likely the case under conditions of free choice. The obvious extension then suggests that free-time behaviors, as have been highlighted in this dissertation, offer more insight into who we are as there are fewer constraints on our behaviors.

It is surprising that an empirical investigation of this type has not yet been conducted. Most likely, the lack of research concerning the relationship of personality and naturalistic behavior is a result of psychology's devaluation of research that is not

hypothesis driven (Mehl, 2004; Rozin, 2001; Funder, 2001, Asch, 1952). Scientists look down on descriptive research as falling short of the statistical and quantitative rigor to which experimental paradigms are subjected while entire fields of study, such as sociology, anthropology, and certain domains of history are built upon that very same idea. Descriptive documentation is a natural first step in generating hypotheses. Social life must first be fully described prior to delineating its functional relations (Asch, 1952). Ironically, the consensus in the Five Factor Model of contemporary personality psychology was founded on such a premise: a large scale mapping procedure followed by a series of rigorous structural analyses. It is clear in that case that empirically founded hypotheses have subsequently been generated.

Many different lines of research extend from this project. One logical step would be to assess the comparative predictive prowess of these dimensions of behavior and traditional personality factors in forecasting long-term outcomes of social significance. It is plausible that behavioral dimensions may do a better job in predicting certain domains of life (i.e. objective health outcomes), but falter where traits reign (i.e. subjective well-being). Delineating the parameters of these domains would be a critical theoretical step.

The developmental course of a profile of behavioral dimensions is also a fruitful area for more research. According to Allport (1937), prior to language acquisition, there is no personality. With a system of personality based on behaviors, patterns can be detected quite early. One promising development in recent years is Paunonen et al.'s (2001) nonverbal measure of the Big 5. Although geared towards assessing personality cross-culturally, the implications are that the challenge in detecting behavioral patterns at an early age lies only in tailoring an inventory to the desired age group. In terms of

stability, it would seem that by early adolescence, consistent patterns of behavior have already begun to emerge.

An additional implication of the proposed behavioral understanding of individuals involves personalizing communications. The reality of both the marketplace and behavior in non-commercial aspects of everyday life is that only certain messages and stimuli are attractive and effective. Affinities are expressed because of the perceived relevance to a given recipient, for instance, relevance to their needs, aspirations and income. The more holistic understanding obtained by the methodology proposed could ultimately help craft messages with an enhanced appeal and effectiveness. A reasonable next step would be to examine the accuracy and appeal of feedback based on behaviors.

The perception of profiles based on everyday behaviors is another interesting angle to pursue. To what extent do behaviors make other-directed identity claims and are they accurately perceived (Gosling et al. 2002)? That is, are people conscious of what their behaviors reveal about them to others? How useful is the information garnered? Perhaps there are certain conditions when behavioral information about others is preferred. It is easy to imagine that in selecting a roommate, one might opt for behavioral information over any other type. Establishing the boundary conditions under which this type of information is useful would be a simple empirical pursuit.

CONCLUSION

In the larger scheme of a behavior-based conception of personality, it is only natural to question how earlier theorists would evaluate this approach. How does this compare to the trait approach? Like the trait approach, this dissertation probes individual differences in tendencies to respond in particular, consistent and enduring ways. The most important criterion for a trait is whether it can predict behavior (Kenny, 1994; Wiggins, 1973). Insofar as past behavior predicts future behavior and the proposed six dimensions of behavior appear stable over time, there is a kernel of similarity between these two approaches. Gordon Allport (1937), however, would insist that there are cardinal traits responsible for explaining the broad range of behaviors on each of these dimensions. Although appreciative of the focus on “characteristic behavior,” or tendencies to respond in consistent and enduring ways, Allport would reject a personality as defined by behavior. To him personality is the determinant. Instead, the framework currently described suggests looking at our objective behaviors to determine who we are—our behaviors, then, are the “proprium,” or core of our personality.

In this way, the current approach has roots in Aristotelian philosophy. To Aristotle, existence is defined by the notion of being “at-work.” In sum, activity is the basis of being. Rather than a static entity, nature, for example is defined by formative activities always at-work (Sachs, 2002). In these terms, our everyday behaviors are the formative activities that make us who we are. The focus of this project has been to look at the expression of these behaviors as structural elements of personality. Future research could explore how naturally we slip into the behavioral habits of our daily lives (Wood, Quinn, & Kashy, 2002). Do we allow these behaviors to be imposed on us by virtue of a

work schedule or other environmental constraint? Do we impose these patterns of behavior on ourselves to make a claim to a given identity (Gosling et al. 2002)? By identifying six stable dimensions of behavior, this project has merely breached the surface of alternative method of assessing personality. The objective behaviors we engage in on a daily basis are a rich, informative type of data that play an important role in capturing the variety of human experience.

APPENDICES

Appendix A: Criterion Check for Items Included on Inventory

Behavior	Objective	Discrete end & beginning	Everyday	Free time (not work)
1. Bought Groceries	X	X	X	X
2. Cooked a meal at home	X	X	X	X
3. Did laundry	X	X	X	X
4. Vacuumed	X	X	X	X
5. Made your bed	X	X	X	X
6. Changed your sheets	X	X	X	X
7. <i>Did yard work</i>	X	X	X	X
8. Wrote a handwritten letter	X	X	X	X
9. Balanced your checkbook	X	X	X	X
10. <i>Traded (bought/ sold) or checked online stocks</i>	X	X	O	O
11. Made a to-do list	X	X	X	X
12. Listened to the radio	X	X	X	X
13. Played a musical instrument	X	X	X	X
14. Played a board game	X	X	X	X
15. Played cards	X	X	X	X
16. Played a computer game	X	X	X	X
17. Watched more than 2 hours of TV	X	X	X	X
18. Blow-dried your hair	X	X	X	X
19. Took a bath	X	X	X	X
20. Took a shower	X	X	X	X
21. Used mouthwash	X	X	X	X
22. Surfed the web	X	X	X	X
23. Downloaded music	X	X	X	X
24. Spent time with your family	X	X	X	X
25. Went to a religious service (e.g. church, temple, synagogue)	X	X	X	X
26. Had an argument with a friend	X	X	X	X
27. Hosted a party	X	X	X	X
28. Participated in an online chat	X	X	X	X
29. Wrote in a journal or diary	X	X	X	X
30. <i>Went to a live sporting event</i>	X	X	O	X
31. Smoked a cigarette	X	X	X	X
32. Talked to your parents on the phone	X	X	X	X
33. Went to bible or other religious group study	X	X	X	X
34. Did nothing (sat around, thinking, daydreaming)	X	X	X	X
35. Went to a special interest group	X	X	X	X
36. Attended performing arts (play, ballet, theatre, opera)	X	X	X	X
37. Spent time working on a hobby (e.g. collecting, painting)	X	X	X	X

38. Talked on the phone with a friend for more than 10 minutes	X	X	X	X
39. Sought or received services from a psychologist, social worker, or psychiatrist	X	X	X	X
40. Went to the movies	X	X	X	X
41. Went shopping (at the mall, or stand-alone stores--not for food)	X	X	X	X
42. Shopped online	X	X	X	X
43. Commuted for over an hour	X	X	X	X
44. Went to an alternative health care provider (chiropractor, acupuncturist, etc.)	X	X	X	X
45. <i>Went to a (medical) doctor</i>	X	X	O	O
46. Ate fast food	X	X	X	X
47. Went out to eat (other than fast food)	X	X	X	X
48. Used public transportation	X	X	X	X
49. Sent personal emails (not work or school related)	X	X	X	X
50. <i>Got a haircut</i>	X	X	O	X
51. Had a facial, massage, or other spa service	X	X	X	X
52. Used a tanning bed	X	X	X	X
53. Spent time organizing things at home (papers, boxes, etc.)	X	X	X	X
54. Did volunteer work	X	X	X	X
55. Read fiction for personal interest	X	X	X	X
56. Read nonfiction for personal interest	X	X	X	X
57. Played with/ took care of a dog (incl. food, exercise, clean-up)	X	X	X	X
58. Played with/ took care of a cat (incl. food, exercise, clean-up)	X	X	X	X
59. <i>Went to a study group</i>	X	X	X	X
60. <i>Studied for an entrance exam (e.g. GRE, LSAT, CPA)*</i>	X	X	X	X
61. Drank wine	X	X	X	X
62. Drank beer	X	X	X	X
63. Drank whisky, vodka, gin, or other hard liquor	X	X	X	X
64. <i>Organized notes for class*</i>	X	X	X	X
65. <i>Wrote a paper, essay, or short story.*</i>	X	X	X	X
66. Went to a museum, art gallery, or exhibition	X	X	X	X
67. Bought gas	X	X	X	X
68. Went running	X	X	X	X
69. Did yoga	X	X	X	X
70. Played billiards or pool	X	X	X	X
71. Walked (for exercise)	X	X	X	X
72. Worked out in a gym	X	X	X	X

73. Worked on a vehicle	X	X	X	X
74. Went to a party	X	X	X	X
75. Did exterior repairs (including outside clean-up)	X	X	X	X
76. Ate dessert	X	X	X	X
77. Got drunk	X	X	X	X
78. Flossed your teeth	X	X	X	X
79. Used a Mac	X	X	X	X
80. Used a PC	X	X	X	X
81. Read job ads (online or in newspaper)	X	X	X	X
82. Took vitamins	X	X	X	X
83. Rented a video/ DVD	X	X	X	X
84. Had sex	X	X	X	X
85. Woke up to an alarm clock/ clock radio	X	X	X	X
86. Sang in the shower	X	X	X	X
87. Took aspirin, etc.	X	X	X	X
88. Read your horoscope	X	X	X	X
89. Chewed gum	X	X	X	X
90. Watched the morning news	X	X	X	X

Note: Items marked by an asterisk (*) were removed because they applied only to a student population; Italicized items were removed for the indicated violations of criteria

Appendix B: Narrowing the Scope of the Behavioral landscape: Which activities are important?

In order to justify the focus of the lens with which to assess personality, it was important to first determine what type of information is in demand and at which level to investigate that domain. Which sources of information do people deem revealing? In a recent study of the personality correlates of music preferences (Rentfrow & Gosling, 2003), the authors provided research participants with an 8-item list of lifestyle and leisure activities pertaining to four different questions relevant to the current project: how personally important is each domain; how much does each domain say about oneself; and, how much does each domain say about one's own and others' personalities. The lifestyle and leisure activities included: music, movies, books and magazines, TV programs, food preferences, bedrooms, hobbies and activities, and clothes. For each question, hobbies and activities emerged as the most important and revealing. On a 100-point scale, hobbies and activities received an average rating of 82 (SD=19.3) on importance and 76.5 (SD=23.4) in revealing information about oneself. With regards to personality, on a 7-point scale, hobbies and activities received a mean of 5.51 (1.54) and 5.89 (1.15) in revealing one's own and others' personalities.

If it is true that hobbies and activities are the most revealing sources of information, which hobbies and activities, specifically, are diagnostic? Which categories naturally arise in describing the behaviors of others? The importance of this stage of research was to delineate the parameters of the behavioral landscape. By investigating lay perceptions of the activities and behaviors that are deemed revealing of who people are (i.e. their personality), we could begin to hone in on the appropriate level of analysis with which to investigate behaviors. Secondly, after designating the main categories of

activities that naturally arise in descriptions of others, we can gauge how revealing a more broad, empirically derived spectrum of sources of information are. Funder (2001) cites the lack of consensus in determining which behaviors to measure and in which context as one of two primary reasons why the relationships between personality and behavior has been so invisible in the literature.

Method

Participants

The first sample was comprised of 67 introductory psychology students who volunteered in exchange for partial fulfillment of an introductory psychology course requirement in the fall of 2004. The average age of participants was 18.7 (SD=1.35). Seven (10.4%) of the participants were male.

Procedure

Participants were directed to a website and informed that our interests were in how much people can learn about someone from their activities and behaviors: the types of activities people do, how frequently they do them, and the ways they do them. Participants were first asked to think of someone they know. With that person in mind, they were asked to think of the things that person does that might communicate something about his/her personality. For each cue listed, they were asked to indicate what those cues might reveal. The following example was provided: “Goes running everyday”... “is healthy.” Participants were asked to list 15 different cues and the

corresponding attributes for 2 different people: one person they like, and one person they dislike.

Data Preparation

After extensively reading through the 2010 nominations, it was determined that sorting the cues into categories by hand was too labor intensive. Thus, all cues (without the corresponding attributes) were aggregated into a single text file. Because the majority of words used to describe others included function words (e.g. “to, a, of, the) without information relevant to this stage of analysis, we processed the text using a computerized parts of speech tagger (Brill Tagger; Brill,1993) to index the relevant aspect of the nominations.

The Brill Tagger is a software program that parses text into various parts of speech including specific types of nouns and verbs. Prior to using the software, the text files need to be formatted with a series of steps to optimize accuracy of tagging parts of speech (e.g. taking context into account). The first step involves MXTERMINATOR (Ratnaparkhi, 1997), a sentence boundary detector program that places each sentence on its own line. Lastly, the Penn Treebank Project script is used for tokenization (MacIntyre, 1995). Tokenization ensures that a space is inserted between punctuation and words for any given text. Ultimately, the texts are processed by the Brill Tagger which uses its own dictionaries, along with grammatical and contextual rules, to yield speech tags with exceptionally high accuracy (Brill, 1995).

Words tagged as nouns and verbs were then entered into Wordsmith, a word frequency counting program. The percentage of nouns and verbs as a function of total words mentioned appears in Table 15.

Table 15
Frequency of Nouns and Verbs Nominated in Describing Behaviors of Others that Reveal Personality

WORD	% TOTAL WORDS	CATEGORY CREATED
People	14.85	How they spend their free time
Time	13.83	
Talks	11.61	
Things	5.96	Music they listen to
Music	4.75	
Phone	3.64	* *see television
Watches	3.13	
Money	3.03	What they spend their money on
Likes	2.93	Which brands they buy
Shops	2.63	
Works	2.64	
Studies	2.42	
Everyday	2.42	Clothes they wear
Clothes	2.32	
Family	2.22	
Reads	1.92	Books they've recently read
Parties	1.81	What they do on weekends
Weekends	1.72	
Listens	1.72	Which television programs they watch
Television	1.72	What kinds of food they eat
Food	1.62	
Sports	1.62	Which sports they play

Based on their frequency in being mentioned, the following 12 categories were selected: music, movies, books, magazines, television programs, food preferences, clothing, brands, free time, money expenditures, weekend activities. Words such as people, talks, parties, phone, watches, and parties were allocated to existing categories

that better matched the context of their usage in the nominations. The categories were then supplemented by 6 more categories based on usage in existing research to be worthy of inclusion: political attitudes, demographics, responses to a personality inventory, a page of their diary, attitudes on social issues; and a photo. All categories were finally assembled into a brief survey on which participants could rate how revealing each source of information would be in meeting someone they had never met before.

Study B

Two independent samples of participants ($N_s=72$ and 186) completed the assembled survey as an in-class assignment prior to two guest lectures. The first sample consisted of 72 introductory psychology students (79.2% female; 2 did not indicate), and the second sample consisted of 186 Advertising and Popular culture students (56.5% female). Although originally analyzed independently, the data were comparable enough to merit aggregate analysis.

Procedure

Participants were given the list of potential sources of information with the following instructions:

“Suppose you are about to meet someone that you have never met before. Before meeting them, you are allowed to see one source of information about them (e.g. what kind of music they listen to, what kind of clothes they wear, etc.). How much do you think each of the following sources of information would reveal about them”

Participants were asked to rate each source using a 7-point Likert scale ranging from “does not reveal any information” to “reveals a lot of information” with the midpoint

indicating a “moderate amount of information.” Lastly, participants selected the one source of information they found most revealing. They were also given the option of including and rating additional sources of information not provided.

Results

Table 16 lists the distributions for each source of information rated. Free time clearly emerged as both the most desirable and most revealing ($M=6.01$, $SD=1.16$) source of information, significantly higher than each other type of information, including weekends $t(257) = 5.01$, $p<.01$. Neither participant sex nor anticipated sex of stranger emerged as having a significant influence on participant ratings. The means and rank orders of attributes were equivalent across samples with two notable, but not surprising exceptions, given the expertise of populations surveyed. Significant differences emerged in how revealing both scores on a traditional personality inventory and the brands someone buys, with psychology students attributing more importance to the responses on a personality inventory $F(1,245) = 6.6$, $p<.05$, and advertising students, to the brands people buy $F(1, 245) = 11.6$, $p<.05$. Also notable about the distribution of ratings of free time behavior was the range of scores reported. The lowest score attributed to weekends was a 3, selected by only 15 participants; each other source of information varied along the full scale of 1 to 7.

The results of this simple 2-part study actively encouraged further exploration of individual differences in free time behaviors. It is common practice for researchers to examine lay beliefs as a preliminary step in exploring manifestations of personality in a new domain (e.g. music, or food preferences). Empirically, it is a ‘low-cost’ method of

demonstrating the importance and relevance of that domain to everyday lives. To emphasize the relevance of *everyday behaviors* in people’s daily lives, at first glance, may seem tautological or redundant. However, with a broad hypothesis that personality is defined by behaviors, it was crucial to specify the parameters of the behavioral landscape. Without determining which aspects of behavior naturally emerge in language as revealing of personality—beyond the adjectives designated by the lexical hypothesis, it was possible to launch an investigation at too broad a level of analysis (e.g. analyzing yearly expenditures) or too narrow (e.g. hygiene).

Table 16
Participants’ Ratings of How Revealing Various Sources of Information Are

	Mean	SD	Percent selecting source as most revealing
Free time	6.01	1.16	31.1%
Weekends	5.63	1.14	5%
How they spend their money	5.57	1.29	5.8%
Diary	5.46	1.56	15%
Social attitudes	5.24	1.28	7.2%
Music preferences	5.10	1.23	3.9%
Clothing	5.02	1.46	7.2%
Political attitudes	4.82	1.52	4.4%
Magazines subscribed to	4.82	1.29	1.1%
Scores on a personality inventory	4.77	1.39	3.9%
TV shows regularly watched	4.75	1.26	1.1%
Books recently read	4.68	1.34	.6%
Brands purchased	4.54	1.57	1.7%
Demographic information	4.20	1.31	0%
Food preferences	4.06	1.48	1.1%
Movies recently seen	3.99	1.34	.6%
Photo	3.89	1.57	3.3%

That participants readily took to the task of nominating 30 behavioral cues along with corresponding attributions reinforces the fact that everyday behaviors can communicate significant personality information. In sum, the cross sample consensus achieved in ranking the most frequently nominated domains, with free time behaviors emerging as the most revealing of these already narrowed-down behaviors, critically shaped the investigation.

Appendix C: Sample Weekend Essay

“On Saturday, my day is relatively structured. I like to wake up early and have coffee; sort of kick back and watch the weather report. Then, I get out some paper and let flow. Sometimes it becomes a task list and other times it becomes a poem. Sometimes I plan finances and others I plan an elaborate remodeling (which doesn't actually happen, but it is fun). Eventually, though, I wind up with a list of things to do for the day. Then, I work out for about an hour and a half, have breakfast with members of my community and my fiancée, and then come home to shower. The next step is to organize the task list. I like to do all the indoor activities in one phase and then do all the outdoor one in another and the ones requiring travel in another. Then, I turn over to dedicated tactical mode and just do what is on the list. I feel a great sense of satisfaction completing my task list. It makes me happy to do household chores, exercise, have fun, socialize, and complete school work in one day. Usually, one of the last tasks is to go to the grocery store and buy items for some elaborate meal and a nice bottle of wine. That is a wonderful way to relax after a good day of doing stuff. I sometimes rent a movie or invite friends over to help with the celebration or relaxation. Sundays, I generally like to sleep in a little. When I wake up, I have a cup of coffee and, less strenuously than on Saturday, think about what I want to do. I do not like to work much, if at all, on Sundays. Yoga, long walk or hiking, a trip to Hill Country, reading for leisure or for class (which I consider fun, too) are usually involved in my day. I call my sons in the afternoon or early evening. Then, I like to watch a little TV, have a nice meal, and sometimes see a movie or play with the cats.”

Appendix D: Cross-sample Factor Structure Convergence: Lewis Goldberg's (in press) Behavioral Criterion Set

Goldberg (in press) administered a 400 item behavioral inventory to a large sample of adults in the Eugene-Springfield Oregon community. His goal was to use the frequency in which participants had performed these specific, socially relevant behaviors as criterion for measuring the bandwidth and fidelity of various commercial personality inventories and their counterparts developed for the International Personality Item Pool. Although Goldberg's purpose was not explicitly to sample the totality of everyday life, there is significant overlap in the 400 behaviors he included on his inventory and those used in the present dissertation.

Goldberg's acts were developed by modifying a list of 324 acts used in Loehlin and Nichols (1976) study of heredity, environment and personality. Items were reformulated, omitted from and added to this list to better suit the adult community sample and tap into various aspects of daily life. For the most part, the items are objective behaviors; however, they include more subjective implications than those generated in the current investigation and behaviors with lower expected frequencies. For example, items include Had an alcoholic drink before breakfast or instead of breakfast, Did something I thought I would never do, Lied about my age, and Had my blood pressure taken. Goldberg's scale is also slightly different including 5 response options: Never; Not in the past year; Once or twice in the past year; Three or more times in the past year, but not more than 15 times (such as once or twice a month); and, More than 15 times in the past year.

Despite the different intentions of Goldberg's inventory of behavioral acts, it is possible to do a factor analysis on overlapping items and test the convergence of his factor structure with that obtained in the current investigation. Goldberg's sample includes 776 participants (450 Females) ranging in age from 18-80. The majority of participants are between 30 and 50 (50.6%) with only 3.6% below 30. Thus, the sample is of a relatively different composition; more equally distributed in sex, and more evenly distributed across the age range.

A Principal Components Analysis with varimax rotation was performed on the 54 behavioral items that overlapped between the 2 studies. Despite the difference in scales—measuring frequency performed as compared to recency of performance, the various factor structures considered were remarkably similar. Like the factor analysis of the residualized behavioral items in Study 2 (after age and sex had been removed), a six factor-structure was rejected because it produced a trivial sixth factor comprised only of religious behavior. When 5 factors were extracted, these items loaded (negatively) with drinking and other “edgy” behaviors in the same fashion as in Study 2. This replication was taken as further evidence that religious acts (attending services, praying, and attending bible study) and behaviors surrounding the consumption of alcohol (i.e. drinking beer, hard liquor, getting drunk) consistently represent poles on a similar dimension.

A five-factor solution was selected that accounted for 35.2% of the total variance with Eigen values ranging from 6.3 to 2.1. The first factor closely resembles the Cultured factor of Study 2. It is characterized by Visiting a museum, Attending arts exhibitions, ballets and other performances, as well as exercising, reading, and writing in

a journal. Recall that each of these behaviors loaded on the first, Cultured factor in Study 2. Although visiting museums and art galleries would be expected to covary, it is noteworthy that unintuitive behaviors such as exercising, using public transportation, reading and writing in a journal consistently covary across samples.

The second factor is most closely related to the Romantic factor including parallel items such as Had a beauty treatment/ hair styled, Made a list, Talked on the phone for over 30 minutes, and Wrote a handwritten letter. However, this factor also includes various household related items similar to the Suburban factor such as Cooked a complete meal, Cleaned my room. This may be a result of the more equal distribution of sex in the current sample. Recall that in the residualized factor structure in Study 2, many of these items from the original Romantic factor tend to load on the Suburban factor while others migrate to the Active factor.

The third factor, as briefly described above most closely resembles the Edgy factor containing positive loading religious behaviors and negative loading acts associated with alcohol consumption. The fourth factor precisely maps on to that identified in Study 2 as Restorative behaviors: surfing the web, playing computer games, playing cards, and surprisingly, having an argument with someone. Recall that “argued with a friend” also loaded with Restorative behaviors in Study 2. Unexpectedly, in the Goldberg data, Running or jogging positively loads on this factor as well as Visited a psychiatrist or psychologist, which was unrelated in Study 2.

Lastly, the fifth factor contains the remaining items that comprise the Suburban factor in Study 2: Making repairs around the house, Doing yard work, Gardening, and

Working on a Vehicle. While this factor lacks the indoor organization behaviors that load on the original Suburban factor, it is otherwise similar.

The overall similarities in factor structures are encouraging given the different formats in which the behaviors were assessed and the divergent sample. Because there is not a one-to-one overlap between items, it was not appropriate to assess the cross sample column vector correlations. However, this data set does offers two promising alternatives. First, it enables us to examine the convergence of similar behavioral dimensions to a more diverse array of traditional personality inventories. Additionally, one could investigate the covariance of objective everyday behaviors with a large set of items that do not satisfy the criteria used in this project (e.g. more subjective behaviors, less frequent behaviors). The goal of including this data in the current project was merely to explore the similarities in factor structure. Undoubtedly, given these superficial similarities suggesting cross sample generalizability, future research should certainly explore these options.

Table 17

Factor Structure of Overlapping Items in Goldberg's (in press) Set of Criterion Behavioral Acts

	Dimensions				
	1	2	3	4	5
Factor 1: CULTURED					
Visited a museum.	.717				
Attended a stage play or musical.	.706			.115	
Attended an art exhibition.	.699		-.114		
Attended a ballet performance.	.614				-.135
Went to a party.	.600	.161			.173
Planned a party.	.468	.382		.131	.111
Went to a movie.	.447	.155		.281	
Used public transportation.	.395			.141	
Ate in a restaurant.	.356	.120		.156	.153
Exercised for 40 minutes or longer.	.355	.145		.187	.272
Read a book.	.352	.306		.106	-.123
Made an entry in a diary or journal.	.248	.185	.233		
Spent an hour at a time daydreaming.	.167				
Factor 2: Romantic (+ Suburban)					
Cooked a complete meal.		.682			-.151
Made my own bed.		.622			
Decorated a room.		.595			
Had a beauty treatment or had my hair styled.		.585	.150		-.391
Cleaned my room.		.567	.134	.139	.128
Washed dishes.		.526		.138	.131
Talked for over thirty minutes at a time on the telephone.		.483		.290	
Made a list.	.127	.447			
Wrote a handwritten letter.	.190	.434	.311	-.236	
Went to a grocery store.		.416			.113
Balanced my checkbook.		.298			
Took vitamins or other health supplements.	.159	.211	.108		
Factor 3: Edgy (reversed)					
Read the Bible.			.765		.124
Said grace before a meal.			.746		.225
Prayed (not including grace before meals).	-.111	.193	.730		.108

Became intoxicated.			-.591	.195	.279
Drank whiskey, vodka, gin, or other hard liquor.	.317		-.560		.307
Drank beer.	.231	-.154	-.545	.151	.404
Drank wine.	.448		-.484		.228
Meditated.	.227		.443	-.138	
Smoked tobacco (cigarettes, cigar, or pipe).	-.226		-.323		.254
Factor 4: Restorative					
Used a computer.	.203		-.133	.748	
Surfed the Internet.	.258		-.115	.739	
Played computer games.				.738	.136
Sent a message by electronic mail (e-mail).	.276			.724	
Argued with someone.		.150		.357	
Went running or jogging.	.215		.142	.295	.282
Learned a new board or card game.		.170	.108	.292	.207
Listened to the radio.		.104	-.123	.282	.158
Played a piano or other instrument.	.237	.100	.161	.265	
Played cards.		.102		.262	.198
Visited a psychiatrist or psychologist.				.233	-.217
Factor 5: Suburban					
Did yard work.		.113			.663
Washed or polished a car.				.162	.608
Made repairs around the house.			-.160	.215	.605
Repaired or did maintenance on a car myself.		-.357	-.113	.274	.546
Gardened.	.131	.320			.490
Watched television.	-.111				.121

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